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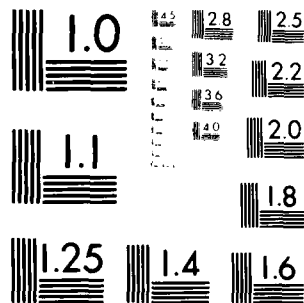
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TECHNICAL REPORT NO. 97

LEVEL II

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**COURSE SCHEDULING MODEL
FOR THE
NAVAL TRAINING COMMAND**

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TAEG Report No. 97

COURSE SCHEDULING MODEL FOR THE NAVAL TRAINING COMMAND

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February 1981

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FOREWORD

This task is a subproject of the Training Systems Design and Management Project (Z1175PN), supported in part by the Navy Personnel Research and Development Center, San Diego, California. Z1175PN includes a number of projects concerned with demonstrating and evaluating the technical, operational, and financial feasibility of applying advanced technological concepts in support of the management decision making process in the Naval Education and Training Command.

The support provided by the Fleet Anti-Submarine Warfare Training Center, Pacific, San Diego, is gratefully acknowledged. STSC C. R. Honeycutt and STGCS T. Saunders, in particular, provided outstanding cooperation and support. Also appreciated is the support and interest demonstrated by the Commander, Training Command, U.S. Pacific Fleet.

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20. ABSTRACT (continued)

course resource interactions and dependencies, and delays in resource acquisitions.

The purpose of this report is to present the Training Management System (TMS) course scheduling system and to provide a user's guide for the operation of the system. The course scheduling system provides an easy and efficient means of handling the large volume of data necessary to generate a feasible schedule for courses in a schoolhouse. The system is highly interactive and user oriented and is intended for use at the schoolhouse level. The program software is written in BASIC-2 and is designed to operate on a Wang 2200 system.



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SECTION I
INTRODUCTION

The course scheduling process is labor intensive throughout the Naval Education and Training Command (NAVEDTRACOM). This process entails generation and maintenance of schedules to meet planned input requirements, which are subject to the suitability/availability of instructors, training equipment, and classroom and laboratory facilities. Course schedules must be established for the current year, constantly updated and revised as necessary, and projected for the out-year planning requirements of the 5-year defense plan. The process is further complicated by varying course lengths and start dates, class sizes, student/instructor ratios, contact hours, cross utilization of instructors and facilities, and delays in resource acquisitions. Consequently, the goal of the scheduling process is to arrive at a feasible rather than an optimum plan in terms of school resources utilization. Trade offs in schedules are made by exception when a crisis situation arises. The procedure for obtaining a feasible plan is not clearly established, resulting in course schedules which may be subject to the vagaries of individual style and competency.

Various aspects of the course scheduling process were addressed in two previous Training Analysis and Evaluation Group (TAEG) reports. TAEG Report No. 52 [1] described the essential components of the existing manual course scheduling process at the Fleet Anti-submarine Warfare Training Center, Pacific (FLEASWTRACENPAC). TAEG Report No. 72 [2] described a prototype of the automatic course scheduling program which automated the existing manual process with the objective of arriving at a feasible schedule easily and quickly.

- [1] W. H. Lindahl and B. W. Lin. "An Heuristic Approach For The Scheduling of Navy Training Courses." TAEG Report No. 52, December 1977. Training Analysis and Evaluation Group, Orlando, FL 32813. (AD A048183)
- [2] B. W. Lin and G. W. Hodak. "Automated Course Scheduling System For Naval Training." TAEG Report No. 72, June 1979. Training Analysis and Evaluation Group, Orlando, FL 32813. (AD A071576)

PURPOSE

The purpose of this report is to present the Training Management System (TMS) and to provide a guide to the operation of the system for NAVEDTRACOM personnel. TMS is an improved and expanded version of the prototype program.

OVERVIEW OF THE TRAINING MANAGEMENT SYSTEM (TMS)

The purpose of the TMS is to provide an easy and efficient means of handling the large volume of data necessary to generate a feasible schedule for courses in a schoolhouse. Figure 1 presents the options that comprise the TMS. There are six options which may be selected by the user via the MASTER TMS MENU. When an option is selected by the user the subsystem appears on the display as a list (menu) of additional options which allow the user to insert, update, delete, or analyze various data elements. A major part of each subsystem is the capability to maintain the various data files of the TMS. Additional options include the capability to conduct a feasibility analysis on various elements of the course file.

The system is designed to be highly interactive and user oriented; thus, numerous messages and instructions are provided throughout to aid the user. This system is designed to accommodate a variety of users in both the initial insertion of data as well as in the analysis of these data.

The TMS software is written in BASIC and designed to operate on a WANG 2200 T 32K system, WANG 2200VP 32K system, or WANG 2200 MVP 56K system. This version of the TMS will not support multiple users of the same data base. All models of currently available WANG disks are supported. The TMS uses a custom version of the Key File Access Method (KFAM-3) for indexing all of the subsystem data files.

ORGANIZATION OF THE REPORT

In addition to this introduction the report is divided into two other sections and an appendix. Section II briefly describes the major system options and suboptions. Section III is a detailed guide to the operation of the TMS. Examples of the various outputs available from TMS are contained in the appendix.

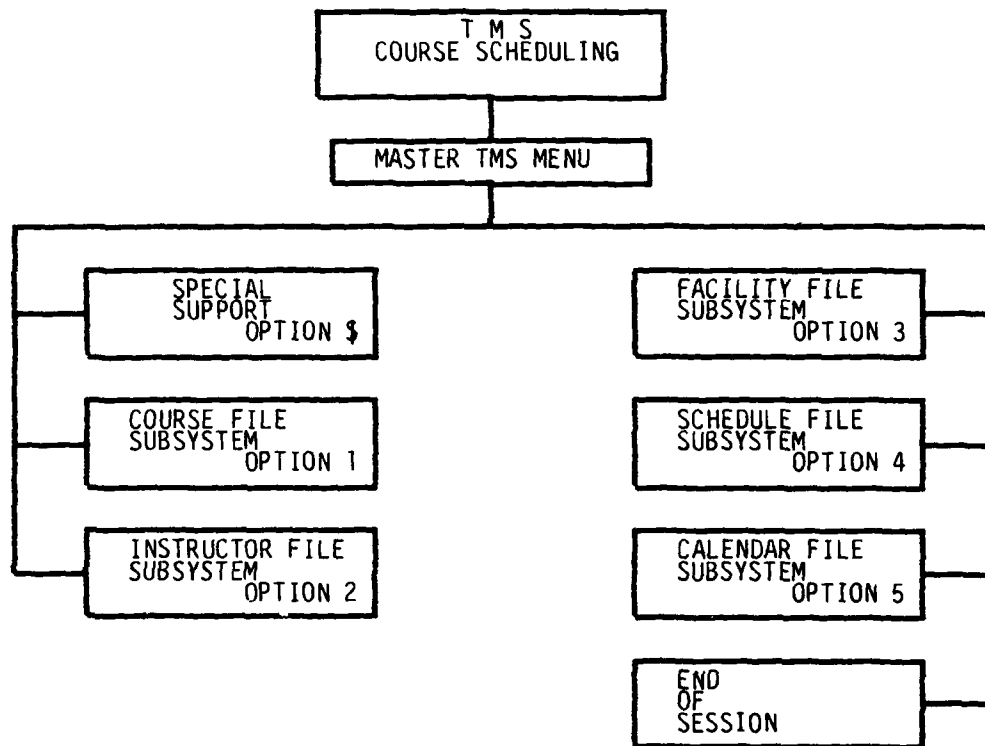


Figure 1. Overview of TMS Course Scheduling System

SECTION II SYSTEM OPTIONS

The Special Support Subsystem (Option \$) consists of programs used to initialize the system data files, initialize the system help files, update the system help files, and print the system help files. The help files may be used to provide messages to aid the user as to how to proceed at various places in the system. These help files may be customized by the user to place more or less emphasis on different parts of the system and to describe techniques which may be unique to the school.

The Course File Subsystem (Option 1) allows the user to add, edit, delete, analyze, and print data items related to each course in the system. The user can analyze the feasibility of various scheduling options by performing various calculations of instructor and trainer requirements on the basis of changes to input parameters. Since the resource requirements may be different over the progression of the course, a breakdown of the course into modules is desirable, to the extent of achieving better accountability of resource utilization. For this purpose, this subsystem allows the user to break down a course into a maximum of 64 modules.

The Instructor and Facility File Subsystems (Options 2 & 3) are used to add, edit, delete, and print instructor and facility data. With the availability tables provided in these subsystems, the user can specify the time slots during which instructors and facilities are not available for training related purposes.

Based on the course requirements and the availability of instructors and facilities, the Schedule File Subsystem (Option 4) is used to generate, update, and print preliminary schedules for all courses described in the Course File. After examining the generated schedules, the user may add, modify, and delete any session of the Schedule File. For instance, if the user desires to move a session to another starting date, the subsystem will check to see whether the resources needed are available or not and report their status.

The Calendar File Subsystem (Option 5) is used to generate a system calendar used throughout the system to show actual starting dates of the current scheduling fiscal year. This subsystem is capable of generating any calendar year, with adjustments made for all federal holidays, including a two week break for the Christmas/New Year period.

Figure 2 illustrates the major system options available with the TMS. The following discussion describes the general features common within each of the system options.

UPDATE OPTIONS

The update programs enable the TMS user to enter data into the various subsystem data files. Data is initially entered into a subsystem data file using the INPUT mode. Once a data record, indexed by CDP, instructor name, building number, etc. has been entered into a subsystem data file it may be changed using the EDIT mode. In the following discussion the term "data element" will refer to the data item used to reference a record in the subsystem data base. The data elements for the Course, Instructor, and Facility data bases are CDP, instructor name, and building/room number, respectively.

Efforts were made to make all TMS input/edit programs operationally identical. However, because of differences in the various TMS subsystems, it was not possible to do so. The features that are similar are discussed in the remainder of this section.

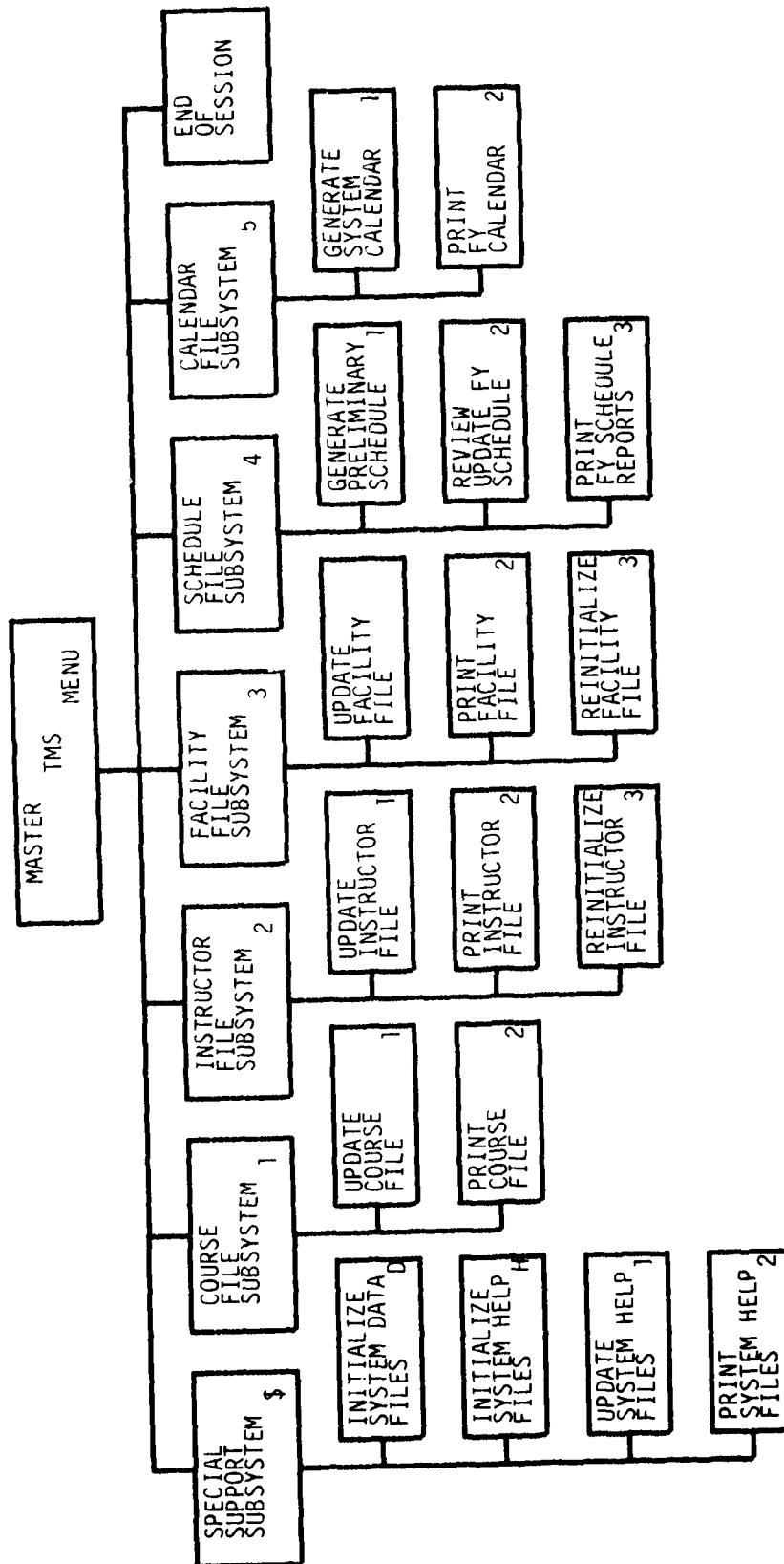


Figure 2. Overview of System Options

INPUT/EDIT OPTIONS

In INPUT mode, if the data element to be entered does not exist in the data base, the data record is appropriately initialized and displayed on the screen. However, if a data element already exists in the data base, the data record is displayed. An example of a data element request is:

```
TMS: UPDATE INSTRUCTOR FILE DATA          06/27/80 R 3 S 7
Please Enter Instructor Name: #####
```

In the EDIT mode, if the data element entered cannot be found in the data base, an error message will be displayed. In the case of the course and instructor data files, if the data element entered is not found then the program will display the next data element within the file and ask if the user wishes to edit that record. For example, the user enters 'SUE' as the name of an instructor to be edited. The system searches the data base and finds that 'SUE' is not in the file but that the next sequential record in the file is 'SUSAN'. The system will display the following:

```
TMS: UPDATE INSTRUCTOR FILE DATA          06/27/80 R 3 S 7
Please Enter Instructor Name: SUE
Insufficient information to process request.
The best that I can do is: SUSAN
* Touch 'N' for next -or- 'E' to edit: #
```

If 'SUSAN' is the instructor to be edited, touching "E" will cause the system to edit that data record. The user may ask the system to display the next data element in the data base by touching "N" until the desired data element is obtained.

All input/edit programs allow changes to be made to data currently displayed on the CRT screen by entering the appropriate code on a prompt line, always located on the last line of the display. Some data items, however, are calculated and/or maintained internally and thus cannot be updated by the user. The Date Last Reviewed, Hours Used, and Utilization are examples of this type of data item. The following is an example of a data entry menu.

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```

TMS: INSTRUCTOR FILE DATA ENTRY - Menu 1      06/27/80 R 3 S 7
[1]  Name] SUSAN                               Date Last Reviewed] 06/27/80
[2]  SSN]                                     ID] S0001 Date Last Changed] 06/27/80
                                     Primary Sec #1 Sec #2 Sec #3 Sec #4
[3]  Instructor Quals]
[4]  Rank/Rate] Report Date] 0/ 0/ 0 PRD] 0/ 0/ 0
[5]  Max Contact Hours Annual] 4000 Weekly] 40 Daily] 8
[6]  Inst Availability Hours Used] 0 Utilization] 0.0 %
      Enter Option (RECALL, RETURN, line #, Save, Help, Print):
  
```

All data lines that may be edited are prefixed by a number enclosed in brackets, for example "[1]." The data items on a particular line may be changed by entering the line number. This will cause the cursor to move to the first data item on the line. At this time the user may change the data element or skip to the next data item by touching RETURN. The user may exit from a line by entering a ";" as the first character of a data item and touching RETURN. This action returns the cursor to the prompt line. The input/edit programs automatically return the cursor to the prompt line following the editing of the last data item on a line.

Several other codes may be entered on the prompt line. The user can obtain a hardcopy of the record currently being input/edited by touching "P". Once the user has made all necessary changes to a record, the record may be saved into the data base by touching "S". A "help" feature is also provided to briefly explain data items and illustrate examples on how to proceed. To view the "help" messages the user simply touches "H".

DELETE OPTIONS

The delete option of a subsystem will allow the user to remove data elements no longer needed from the data base. If the data element to be deleted is in the data base, the system will display a summary page of the data record and ask the user to verify that the data element chosen is the one to be deleted. The program will display on the last line of the display the following message:

Is this the record you wish to Delete (Y/N): #

If the user enters a "Y" then the record is removed from the data base; otherwise, the program will ask the user for another data element to be deleted. If the data element to be deleted is not in the data base the following message is displayed and the program will ask the user for another data element to be deleted.

;; Unable to Locate in Key File ;;

PRINT OPTIONS

The print option of a subsystem enables the user to print a listing of the contents of the system data base. A print menu may look like:

TMS: PRINT INSTRUCTOR DATA BASE		08/12/80 R 3 S 1
Option	Output Sequence	
1	Output by Instructor Name	
2	Output by Instructor Qualification	
3	Output by Instructor ID	
.	Return to Instructor Subsystem Menu	
Enter Option: #		

Selecting "1", for example, the screen will display the following:

Instructor Name Sequence

Enter Starting Key or RETURN: #####

The prompt line asks for the starting instructor name to be entered. If only the RETURN key is pressed, the starting key defaults to the first instructor. After entering the starting key, the system prompts for the ending key to be printed:

Enter Ending Key or RETURN: #####

Similar to the previous prompt, if only the RETURN key is pressed, the default is the last instructor.

On entering desired starting and ending values, the system will display the following and then begin processing data:

* Touch any key to interrupt *

The printing can be interrupted by touching any key. Touching any key will cause the screen to display:

* Interrupted: 'C' to Continue, 'S' to Stop *

The user may touch "C" to continue printing or "S" to stop printing.

When the report has been completed or interrupted and stopped, the program will return to the subsystem menu.

UPDATE AVAILABILITY TABLES

As noted earlier, availability tables are used to keep track of time slots during which instructors and facilities are available for course assignment. A typical display may look like:

TMS: INSTRUCTOR FILE DATA ENTRY - Menu 2										08/12/80 R 3 S 1
	OCT				NOV					DEC
	6	13	20	26	2	9	16	23	30	1
Wks	1	2	3	4	5	6	7	8	9	10
shft	123	123	123	123	123	123	123	123	123	123
Mon	...	123	...	...	1..	...	...	..	...	...
Tue	...	123	...	...	1..	...	...	..	...	...
Wed	...	123	...	...	1..	...	...	..	...	...
Thr	...	123	...	...	1..	...	...	..	...	...
Fri	...	123	...	...	1..	...	...	..	...	...
Enter Option (RECALL, RETURN, U, A, Save, Help, Print):										
#####										

This display shows a 10-week portion of the 100 week availability table for an instructor. Each week is broken down into five days (monday-friday), and each day into three shifts. A "." indicates that the instructor is available on the designated day, a "1" or "2" or "3" indicates that the instructor is unavailable for shift 1, 2, or 3 on the designated day. The display also shows the starting date of each week and which week of the 100 weeks is being viewed.

An instructor/facility may be designated as being available or unavailable for selected periods of time (weeks, days, and/or shifts) throughout the 100-week period. The format for updating the table is made up of four fields. The first, "command", is required. Fields 2, 3, and 4 are optional.

command	/switch value	/switch value	/switch value
(1)	(2)	(3)	(4)

The first, "command", must be either an "A" or "U". An "A" will mark the instructor/facility as available for the selected dates. A "U" will mark the instructor/facility as unavailable for the selected dates. If either "U" or "A" is used alone (fields 2-4 are omitted), it indicates the instructor/facility is unavailable or available for the entire 100-week scheduling period.

Fields 2-4, "switch value", have a similar format. A "switch" can be a "W", "D", or "S". A "W" is used to specify which weeks will be affected by the selected "command" (field 1). The "value" of weeks must be between 1 and 100. A "D" is used to specify which days of the week are to be affected by the selected "command". The "value" of days must be between 1 and 5. An "S" is used to specify which shifts of the day are to be affected by the selected "command." The "value" of shifts must be between 1 and 3. If a "switch" and its "value" is not entered then all weeks, and/or all days, and/or all shifts are assumed.

A "value" may be specified as a single value or as a range. A single value is simply the number of the week, day, or shift being specified. A range is two values separated by a "-". The first value specifies the starting value; the second value specifies the ending value of the weeks, days, or shifts being specified.

Some examples are:

U	[set all weeks, all days, and all shifts unavailable]
U/W4/D2/S2-3	[set week 4, day 2 (tue), and shifts 2 and 3 as unavailable]
A/W3	[set all days, and all shifts available for week 3]

SECTION III

TMS OPERATING PROCEDURES

This section presents the procedures for the use of the TMS. The user is assumed to have no familiarity with the operation of a WANG 2200 series computer system. However, because of the many equipment configurations that exist in the NAVEDTRACOM, it is assumed that personnel familiar with WANG computer hardware are available to set up the equipment for use. Step-by-step procedures are provided for using each of the TMS subsystems and are described in the following sections.

The TMS was designed to be highly interactive and user oriented. Consequently the TMS provides special user responses to facilitate its use. These special responses apply to specific displays and are explained in designated sections which describe the preparation of each display. A summary of appropriate responses is displayed on the screen while the TMS is being used. This feature of the system eliminates the requirement that the user memorize procedures. Appropriately responding to the messages and instructions provided will lead to efficient and effective system utilization.

Two special keys are provided, the RECALL key located in the upper right corner of the keyboard (thin grey key on VP and T computers, square white key on MVP computers) and the RETURN or RETURN(EXEC) key. (There are two RETURN keys in different locations on the keyboard.) Pressing the RECALL key will always take the user back to the previous operation. The RETURN key will allow the user to execute the default option. When operating with a menu the default option is indicated by a ".". In most other cases the default is the next operation.

SETTING UP THE TMS

Note:

The TMS is designed to run on both a 2200T series and a 2200VP/MVP series CPU. Because of the different operating systems on these two CPU's, the set up commands will be divided into two groups showing the valid syntax for each operating system.

It is assumed that the necessary computer hardware (CRT, Disk Drive(s), and Line Printer) are available to the user. When the system has been set up the following will appear on the CRT display:

READY (BASIC-2 :	T/VP/MVP
---------------------	----------

To load the TMS system the user should type in the following commands:

:SELECT DISK xxx (*)	(RETURN)	VP/MVP
:LOAD RUN	(RETURN)	

OR

:SELECT DISK xxx (*)	(RETURN)	T
:LOAD DCT "START"	(RETURN)	
:RUN	(RETURN)	

(*) where "xxx" is replaced by the appropriate disk address where the TMS system programs disk is located.

Upon completion of the above step, the following display will appear on the screen:

*** Attention ***

All of the data entry prompts used throughout this system terminate (cursor moves to next prompt) automatically when full. If the RETURN key is pressed to terminate a prompt which has been filled the system assumes the RETURN pertains to the next prompt, which is then terminated. This automatic termination of full fields is incorporated into the system to increase user productivity by decreasing the necessary number of keystrokes. It may take some time getting used to, but in the long run is much more efficient.

Ready, Please touch RETURN to Continue... #

Upon touching RETURN the program will display:

Welcome to the Training Management System mm/dd/yy R 3 S 0

Please Enter Today's Date (mmddyy): #####

Please Enter Console Address: ###

Please Enter Printer Address: ###

System	Course	Instructor	Facility	Schedule	Console	Printer
/xxx	/xxx	/xxx	/xxx	/xxx	/xxx	/xxx

To continue, the present date, console address, and printer address must be entered. After the last entry is made the following five questions will appear on the screen:

Please Enter the Disk Address of
the disk drive containing SCHEDULE PROGRAMS: ###

Please Enter the Disk Address of
the disk drive containing COURSE FILE DATA BASE: ###

Please Enter the Disk Address of
the disk drive containing INSTRUCTOR FILE DATA BASE: ###

Please Enter the Disk Address of
the disk drive containing FACILITY FILE DATA BASE: ###

Please Enter the Disk Address of
the disk drive containing SCHEDULE FILE DATA BASE: ###

The system can be set up to default through the previous seven responses (console, printer, and disk addresses), so if there are no changes to be made to the default values, pressing RETURN seven times will allow the user to proceed to the final two responses in this section.

The system will now display the final two responses in the section:

```
Please Enter Your USER ID: #####  
Please Enter PASSWORD: #####
```

The user ID is a 10 character code which identifies the user to the system. All allowable ID codes must be defined at system installation time and are then programmed into the system. A total of 16 user ID codes may be defined. The password is an eight character code which must be entered by all users before the system will continue to the next section. The password must also be defined at system installation time and is also programmed into the system. Once the user ID and password have been entered the screen will display:

```
#####  
We are now on our way to the  
next exciting subsystem of the  
TRAINING MANAGEMENT DATA SYSTEM  
[TMS KFAM]  
#####
```

which will immediately be followed by:

TMS: * * * MASTER TMS MENU * * *		08/17/80 R 3 S 1
Option	Description of Subsystem	
\$	TMS Special Support Programs	
1	Course File Subsystem	
2	Instructor File Subsystem	
3	Facility File Subsystem	
4	Schedule File Subsystem	
5	Calendar File Subsystem	
.	End of Session	
Enter Option: #		

The above display is called the "MASTER TMS MENU." It is the beginning and end of all subsystem operations. From this menu the user may select any one of the six available options.

When the system is used for the first time, all of the system data files must be initialized; otherwise any attempts to use the system will result in some error messages. To initialize all the system data files, option "D-Initialize System Data Files" of the Special Support Subsystem described in the next section must be executed. The system calendar must also be initialized by executing the Calendar File Subsystem option. Once all the initializations are completed, the Master TMS MENU will be displayed on the screen.

The user, at this point, may proceed to enter course, instructor, and facility data. The user then may generate and modify course schedules.

The remainder of this report describes each of the six subsystems available with the TMS.

SPECIAL SUPPORT SUBSYSTEM (MASTER TMS MENU OPTION "\$")

Figure 3 shows the various options available to the user of the TMS Special Support Subsystem.

Selecting option "\$", Special Support Subsystem, from the MASTER TMS MENU will cause the system to display:

```

$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$      We are now on our way to the      $$$
$$$      next exciting subsystem of the     $$$
$$$      TRAINING MANAGEMENT DATA SYSTEM  $$$
$$$      [TMS.$SYS]                        $$$
$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
  
```

which will be immediately followed by:

```

TMS:  * SPECIAL SUPPORT SUBSYSTEM MENU *      06/27/80  R 3  S 1
      Option | Description of Subsystem
      -----|-----
          D | Initialize System Data Files
          H | Initialize System Help Files
          1 | Update System Help Files
          2 | Print System Help Files
          . | Return to MASTER TMS MENU
Enter Option: #
  
```

OPTION "D" - INITIALIZE SYSTEM DATA FILES. This option is used to initialize all of the system data key files. All suboptions must be executed when the system is first installed. Additionally all suboptions of option "D" must be executed every time a new schedule is to be generated. Selecting option "D" from the above menu will result in the following display:

```

TMS:  * FILE SELECTION MENU *      OPTION D      06/27/80  R 3  S 1
      Option | Description of Subsystem
      -----|-----
          1P | Initialize Primary Course Data File
          1S | Initialize Secondary Course Data File
          2  | Initialize Instructor Data File
          3  | Initialize Facility Data File
          4  | Initialize Schedule Data File
          5  | Initialize Calendar Data File
          .  | Return to SPECIAL SUPPORT SUBSYSTEM MENU
Enter Option: ##
  
```

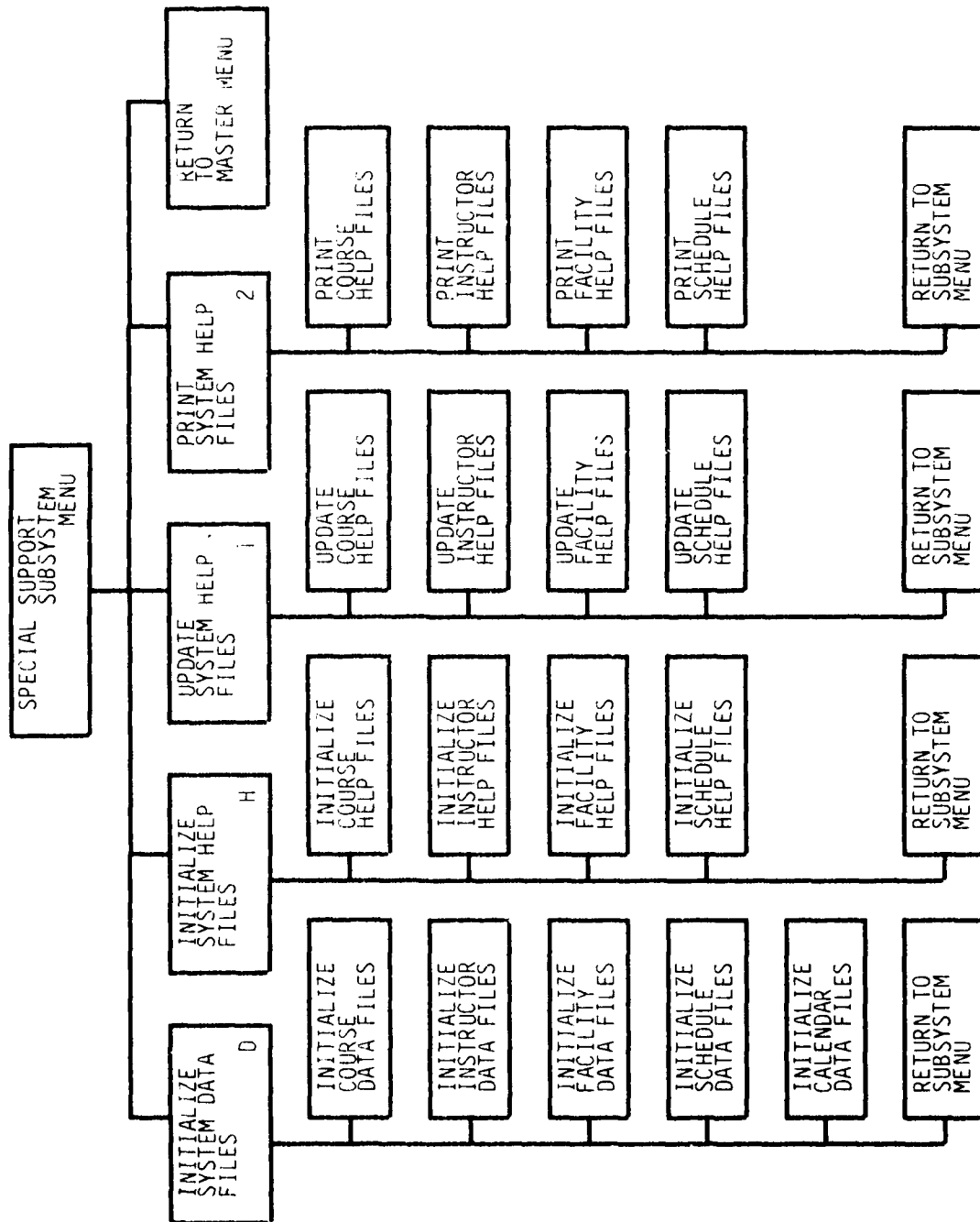


Figure 3. Special Support Subsystem (Master TMS Menu Option "\$")

All options on the File Selection Menu operate alike; option 4 is used for illustration. After entering a "4", the following message appears on the screen:

```
TMS: FILE INITIALIZATION                                06/27/80 R 3 S 1
      * * * SCHEDULE FILE INITIALIZATION * * *

Please enter the approx. number of data records that will be
input into the file. The number input will be increased by
25% to allow for unexpected input. The number input may not
exceed the system max of 1000 records.

Enter approx. Number of Records: #####
```

Entering the expected number of schedule records will cause the program to display:

```
;; Adjusted Number of Records is: #####
;; Please Mount Disk Platter on Disk: /### ;;
Touch RETURN(EXEC) When Ready... #
```

At this point, mount the disk which will contain the schedule data file on the designated disk drive and press RETURN. On touching RETURN, a description of the file to be initialized will appear on the screen:

```
TMS: FILE INITIALIZATION                                06/27/80 R 3 S 1
      * * * SCHEDULE FILE INITIALIZATION * * *

Initial-izing key file file sctr logcl blk key strt numbr
user file num type per rec len fctr len of of kfam
          1 M 3 1 1 24 3 62 3
          TMSSF1

Touch RETURN(EXEC) to Proceed: #
```

To initialize all data files related to the schedule subsystem, continue touching RETURN until the system returns to the File Selection Menu. If all subsystem data files have been initialized touching an additional RETURN will return the system to the Special Support Subsystem Menu, otherwise, follow a similar procedure for the remaining subsystem data files.

OPTION "H" - INITIALIZE SYSTEM HELP FILES. This option is used to initialize all of the system help files. All suboptions must be executed when the system is first installed. Help files are used to store messages that the user may recall at various points in the system to facilitate the use of the system. Choosing option "H" from the Special Support Subsystem Menu will cause the screen to display:

TMS: * HELP FILE SELECTION MENU *		06/27/80 R 3 S 7
Option	Description of Subsystem	
1	Initialize Course Help Files	
2	Initialize Instructor Help Files	
3	Initialize Facility Help Files	
4	Initialize Schedule Help Files	
.	Return to SPECIAL SUPPORT SUBSYSTEM MENU	
Enter Option: #		

All options on the Help File Selection Menu operate alike; option 4 is used for illustration. After entering a "4", the following message appears on the screen:

TMS: FILE INITIALIZATION		06/27/80 R 3 S 1
* HELP FILE: SCHEDULE FILE INITIALIZATION *		
;; Please Mount Disk Platter on Disk: /### ;;		
Touch RETURN(EXEC) When Ready... #		

At this point, mount the program disk on the designated disk drive and press RETURN. On touching RETURN, a description of the file to be initialized will appear on the screen:

```

TMS:  FILE INITIALIZATION                                06/27/80  R 3  S 1
      *  HELP FILE:  SCHEDULE FILE INITIALIZATION  *

Initial-  key  file  sctr  logcl  blk  key  strt  numbr  kfam
izing    file  file  per   rec   fctr len  of    of     ver
user file num  type rec   len                                rcrds
-----
TMS@SCHA  0    0    0     0     0    0    0    0     9    0

      Touch RETURN(EXEC)  to Proceed:  #

```

To initialize all help files related to the schedule subsystem, continue touching RETURN until the system returns to the Help File Selection Menu. If all subsystem help files have been initialized touching an additional RETURN will return the system to the Special Support Subsystem Menu, otherwise, follow a similar procedure for the remaining subsystem help files.

OPTION "1" - UPDATE SYSTEM HELP FILES. This option may be used to update the messages contained in all of the system help files. Selecting option "1" from the Special Support Subsystem Menu will cause the program to display:

```
TMS: * HELP FILE UPDATE (COURSE FILE) * 08/20/80 R 3 S 1
```

Option	Description of Subsystem
C1	Course File Data Entry Menu 1 Help
C2	Course File Data Entry Menu 2 Help
C3	Course File Data Entry Menu 3 Help
C4	Course File Data Entry Menu 4 Help
N2	Next Page of Options
..	Return to SPECIAL SUPPORT MENU

Enter Option: ##

In the course file subsystem, there are four menus. Options C1, C2, C3, and C4 correspond to each of the four menus. Entering option C2, for example, will lead to display:

```
TMS: Course File Data Entry Menu 2 Help 08/20/80 R 3 S 1
-----V-----V-----V-----V-----[V]-----V-----V-----V-----V-----

-----'-----'-----'-----'-----['']-----'-----'-----'-----'-----
* Touch STMT NUMBER (VP/T System) or FN (MVP System) when Done *
```

The user is now free to update the help file message. Special function keys 1 through 15 and 20 through 30 may be used to move the cursor and modify the text in the help file. Figure 4 gives a brief summary of the available special functions.

SF key	Description of Function
1	Display the next 12 lines of the text file. Each text file contains 36 lines of text.
2	Find a specified character string. Entered after touching SF '2, the program will begin the search when RETURN is touched.
3	Copy a specified character string. The source string is specified by first positioning the cursor to the start of the string by touching SF '3, then positioning the cursor at the end of the string and again touching SF '3, the cursor is then positioned at the destination point and SF '3 is touched a third time. Touching "I" or "R" will cause the specified string to be inserted at the current location or to replace the text at the current location.
4 (20)	Move the cursor to the end of the text file.
5 (21)	Move the cursor down one (five) line(s).
6 (22)	Move the cursor up one (five) line(s).
7 (23)	Move the cursor to the beginning of the text file.
8 (24)	Erase all text from the current cursor position to the end of the text file.
9 (25)	Delete one character (line) from the text file.
10 (26)	Insert one character (line) into the text file.
11 (27)	Move the cursor five characters to the right.
12 (28)	Move the cursor one character to the right.
13 (29)	Move the cursor one character to the left.
14 (30)	Move the cursor five characters to the left.

Figure 4. Summary of Text File Special Function Keys

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Additional options may be selected by entering option "N2" or by touching RETURN. All additional displays are shown below:

TMS: * HELP FILE UPDATE (INSTRUCTOR FILE) * 08/20/80 R 3 S 1	
Option	Description of Subsystem
I1	Instructor File Data Entry Menu 1 Help
I2	Instructor File Data Entry Menu 2 Help
N3	Next Page of Options
..	Return to SPECIAL SUPPORT MENU
Enter Option: ##	

TMS: * HELP FILE UPDATE (FACILITY FILE) * 08/20/80 R 3 S 1	
Option	Description of Subsystem
F1	Facility File Data Entry Menu 1 Help
F2	Facility File Data Entry Menu 2 Help
N4	Next Page of Options
..	Return to SPECIAL SUPPORT MENU
Enter Option: ##	

TMS: * HELP FILE UPDATE (SCHEDULE FILE) * 08/20/80 R 3 S 1	
Option	Description of Subsystem
S1	Schedule File Generation Program Help
S2	Schedule File Update Program Help
S3	Schedule File Data Entry Help
S4	Schedule Program: Mount Message
S5	Schedule Program: Remount Message
S6	Schedule Program: File not empty
S7	Schedule Program: File empty
N1	First Page of Options
..	Return to SPECIAL SUPPORT MENU
Enter Option: ##	

OPTION "2" - PRINT SYSTEM HELP FILES. This option may be used to print all of the help file messages on the printer. Selecting option "2" from the Special Support Subsystem Menu will cause the program to display:

TMS: * HELP FILE PRINT (COURSE FILE) * 08/20/80 R 3 S 1	
Option	Description of Subsystem
C1	Course File Data Entry Menu 1 Help
C2	Course File Data Entry Menu 2 Help
C3	Course File Data Entry Menu 3 Help
C4	Course File Data Entry Menu 4 Help
N2	Next Page of Options
..	Return to SPECIAL SUPPORT MENU
Enter Option: ##	

Additional options may be selected by entering option "N2" or by touching RETURN. All additional displays are shown below:

TMS: * HELP FILE PRINT (INSTRUCTOR FILE) * 08/20/80 R 3 S 1	
Option	Description of Subsystem
I1	Instructor File Data Entry Menu 1 Help
I2	Instructor File Data Entry Menu 2 Help
N3	Next Page of Options
..	Return to SPECIAL SUPPORT MENU
Enter Option: ##	

TMS: * HELP FILE PRINT (FACILITY FILE) * 08/20/80 R 3 S 1	
Option	Description of Subsystem
F1	Facility File Data Entry Menu 1 Help
F2	Facility File Data Entry Menu 2 Help
N4	Next Page of Options
..	Return to SPECIAL SUPPORT MENU
Enter Option: ##	

TMS: * HELP FILE PRINT (SCHEDULE FILE) * 08/20/80 R 3 S 1	
Option	Description of Subsystem
S1	Schedule File Generation Program Help
S2	Schedule File Update Program Help
S3	Schedule File Data Entry Help
S4	Schedule Program: Mount Message
S5	Schedule Program: Remount Message
S6	Schedule Program: File not empty
S7	Schedule Program: File empty
N1	First Page of Options
..	Return to SPECIAL SUPPORT MENU
Enter Option: ##	

All options on the Help File Print Menu operate alike; option "S2" is used for illustration. After entering "S2" the program will print the contents of the text file onto the system printer. (To select the system printer, see SETTING UP THE TMS section of this report.) When printing is completed the program will redisplay the first Help File Print Menu (the Course File).

COURSE FILE SUBSYSTEM (MASTER TMS MENU OPTION "1")

Figure 5 shows the various options available to the user of the TMS Course File Subsystem.

Selecting option "1", Course File Subsystem, from the MASTER TMS MENU will cause the system to display:

```

#####
We are now on our way to the
next exciting subsystem of the
TRAINING MANAGEMENT DATA SYSTEM
[TMS.CRS]
#####
    
```

which will be immediately followed by:

```

TMS:  * COURSE FILE SUBSYSTEM MENU *          06/27/80  R 3  S 1
Option | Description of Subsystem
-----|-----
1      | Update Course File
2      | Print Course File
.      | Return to MASTER TMS MENU
Enter Option: #
    
```

Option "1" - UPDATE COURSE FILE. Selecting option "1" from this menu will result in the following display:

```

#####
We are now on our way to the
next exciting subsystem of the
TRAINING MANAGEMENT DATA SYSTEM
[TMS.LGO]
#####
    
```

which will be immediately followed by:

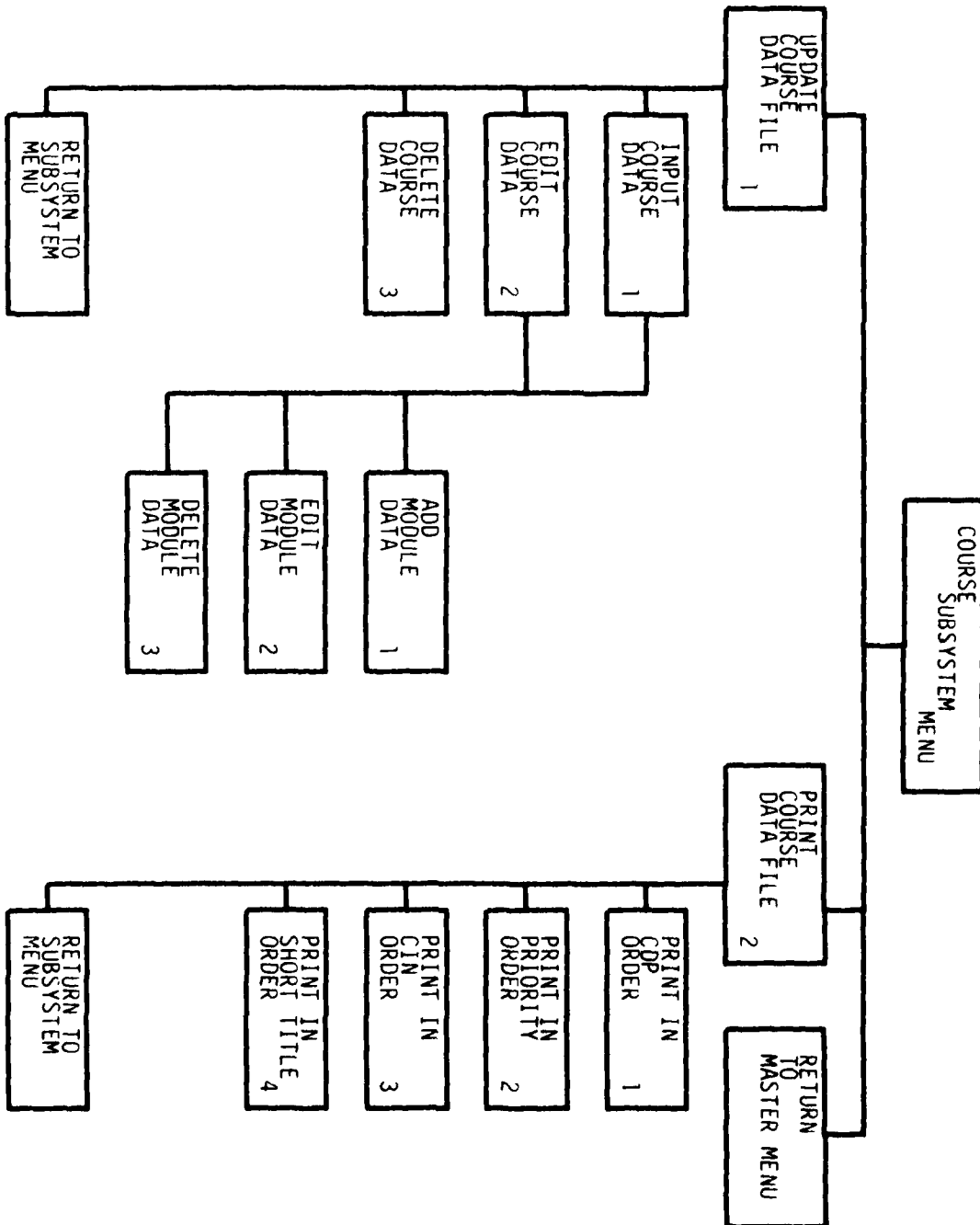


Figure 5. Course File Subsystem (Master TMS Menu Option "1")

```

TMS: COURSE FILE UPDATE MENU                                06/27/80 R 3 S 7
  Option | Edit Operation
  -----|-----
    1    | Add to Course File
    2    | Edit Course File Data
    3    | Delete Course File Data
    .    | Exit and Return to Subsystem Menu
Enter Option:

```

Choosing option 1, 2, or 3 from the Update Menu will cause the screen to display:

TMS: COURSE FILE DATA 06/27/80 R 3 S 7

Please Enter CDP Number: ###

For options 1, 2, and 3, entering the desired CDP number will cause the CRT screen to display the following:

```

TMS: COURSE FILE DATA ENTRY - Menu 1          07/30/80 R 3 S 1

[1] CDP] 1111 Date Last Reviewed] 07/30/80
[2] CIN] A111111 RMS] 1111 Priority] 1.100
[3] Course Titles v Long v Short] adv bb stacking
advanced theory involving the balancing of spherical structures
class class course instructors support trainers
size input length mpa onboard req mpa onboard avail req

[4] 7 100 30 0 0 6 0 0 0 6
[5] Contact Ratios (type/hours) v
25/100 ; 15/25 ; 4/18 ; 0/0 ; 0/0 ; 0/0 ; 0/0
number of start date convenings(number/freq) C/C
modules week d-o-w shift 1 shift 2 shift 3 classes aob

[6] 4 3 3 5/ 20 5/35 5/50 4.80 8.21
[7] Update Course Module Data [8] Feasibility Calculations

Enter Option (Recall, Return, Line #, Save, Help, Print): #

```

The inputting, editing, and deleting of the data items are described in the SYSTEM OPTIONS section of this report. Figure 6 gives a summary description of the data items shown above.

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Line/Option	Description of data items and/or functions
1.	Course Data Processing (CDP) Code. A code that identifies each course of instruction by location. Identical courses taught in different locations will have individual CDP codes. It becomes the enlisted Training History Code.
2.	Course Identification Number (CIN). The 10-position alphanumeric CIN used in the Catalog of Navy Training Courses. This identifies the command sponsoring the course, the DOD skill code for which the course trains and the sequence number to facilitate locating the course within the course catalog.
.	RMS Cost Code (RMS). A code to identify funding support of the course.
.	Priority. A code to record the scheduling priority for each course.
3.	Course Long Title (Long). Full descriptive title of the course. [Read down.]
.	Course Short Title (Short). Abbreviated descriptive title of the course. [Read across.]
4.	Class Size. The current limiting capacity for the course.
.	Planned Input. The current total anticipated annual demand for the course.
.	Course length. The number of calendar days that expire from the class convening date to the class graduation date.
.	Instructors: MPA, Onboard, and Required. The number of instructors authorized, available, and required for the course.
.	Support: MPA and Onboard. The number of support personnel authorized and available for the course.
.	Trainers Available and Required. The number of simulated or operational training equipment available for the course.
5.	Contact Ratios. The ratio of type hours to hours for this type. Type hours is the students to instructor ratio. Up to seven contact ratios may be entered.
6.	Number of Modules. The number of modules to comprise a course as defined by the user.
.	Start Date, week and day-of-week. The desired week and day-of-week to schedule the first convening.
.	Number of convenings and convening frequency. The number convenings and convening frequency for shifts 1, 2, and 3.
.	Concurrent Classes (C/C). The number of convenings of the same course being concurrently convened.
.	Average on Board (AOB). A number which represents the average number of students at an activity over a 1 year period.
7.	Update Course Module Data. This enables the user to create and maintain modules of courses.
8.	Feasibility Calculations. This option allows the user to perform various calculations of instructor and trainer requirements on the basis of changes to input parameters so that the feasibility of course schedules can be assessed.

Figure 6. Summary of Course File Data Items (Menu 1)

Item 7 enables the user to add and maintain modules of courses.
 Entering "7" results in the following display:

```

TMS: COURSE FILE DATA ENTRY - Menu 2                08/20/80 R 3 S 1
    Modules Defined For This Course:
        1, 2, 3

[1] Add a module.
[2] Update a module.
[3] Delete a module.
[4] Return to menu 1.

Enter Option (RECALL,RETURN,option #,Save,Help,Print): #
    
```

In the example, three modules are defined. The options on this menu operate alike; option 2 is used for demonstration. Selecting this option will cause the screen to display:

```

TMS: COURSE FILE DATA ENTRY - Menu 2                08/20/80 R 3 S 1
    Modules Defined For This Course:
        1, 2, 3

[2] Update a module.

Enter Module Number (1-64): ##
    
```

The user may now enter the desired module number to be updated. Touching RETURN here brings the user back to the previous display. After entering the desired module number, the program will display:

TMS: COURSE FILE DATA ENTRY - Menu 2		08/20/80 R 3 S 1
Module Update		
Module: 2		
cdp: 1111/ 2	title: adv bb stacking	size: 7
[1] Length (days): 5	Students per Inst: 5	Sessions: 2
[2] Type Room: 1 /	Last Reviewed: 08/20/80	
Room Size: 25		
[3] Instructor Quals: 10237	Primary Sec #1	Sec #2 Sec #3 Sec #4
Enter Option (RECALL,RETURN,line #, Save,Help,Print): #		

The module record may now be processed using those options described in the SYSTEM OPTIONS section of this report.

Item 8 of the Course Data Entry File - Menu 1 enables the user to perform various calculations of instructor and trainer requirements on the basis of changes to input parameters so that the feasibility of course schedules can be assessed. Entering "8" will cause the program to display:

TMS: COURSE FILE DATA ENTRY - Menu 3		07/30/80 R 3 S 1
Automatic Feasibility Calculation Options		
[1]	Compute Class Size based on Convenings and Input	
[2]	Compute Convenings based on Input and Size (days)	
[3]	Compute Convenings based on Input and Size (weeks)	
[4]	Compute Instructor Requirements	
[5]	Compute Trainers Required	
[6]	Compute Sessions based on Student per Instructor Ratio	
[7]	Return To Previous Display	
Enter Option (RECALL,RETURN,option #,Save,Help,Print): #		

The user may select to perform a combination of calculations available on the Menu with some exceptions. Options 1, 2, and 3 must not be selected at the same time. Computations of instructor requirements in option 4 follow the CNO 1000/2 report.

After selecting an option the program will display an "i" next to the function selected. When the operation is complete the program will change the "i" to a "*" indicating that the operation is completed. An "i" remaining displayed means that the operation could not be completed properly due to a conflict of input parameters. The user should check all input data for accuracy and after correcting re-execute the option. An example of such a display is shown below:

```

TMS:  COURSE FILE DATA ENTRY - Menu 3          07/30/80 R 3 S 1
      Automatic Feasibility Calculation Options
[1]   Compute Class Size based on Convenings and Input
[2]   Compute Convenings based on Input and Size (days)
[3]   * Compute Convenings based on Input and Size (weeks)
[4]   * Compute Instructor Requirements
[5]   * Compute Trainers Required
[6]   i Compute Sessions based on Student per Instructor Ratio
[7]   Return To Previous Display

Enter Option (RECALL,RETURN,option #,Save,Help,Print): #
    
```

Option 6 computes the number of required sessions for each module defined, based on the course class size and the student per instructor ratio. Therefore, all modules should be checked for proper values. After all functions have been performed, touching RETURN or "7" will cause the program to return to "COURSE FILE DATA ENTRY - Menu 1."

The "Save" option must be used to save the data into the course data base. Before data gets saved, the system checks to see whether the data to be saved are reasonable in terms of sufficient instructors, trainers, facilities, and convenings. Such checking is critical if schedules are to be generated based on the reasonableness of the data saved. If the data to be saved appears unreasonable, such messages as ";; Insufficient Instructors ;;", ";; Insufficient Trainers ;;", or ";; Insufficient Convenings ;;" will be displayed on the last line of the display, and the data does not get saved. Appropriate changes to the data elements are needed before the data may be saved.

OPTION "2" - PRINT COURSE FILE. Selection of option "2" on the Course File Subsystem Menu will cause the program to display:

TMS: PRINT COURSE FILE DATA		08/20/80 R 3 S 1
Option	Output Sequence	
1	Output by CDP	
2	Output by Priority	
3	Output by CIN	
4	Output by Short Title	
.	Return to Subsystem Menu	
Please enter Option: #		

As shown in the Menu, the course file can be printed by CDP, priority, CIN, and short title. Procedures on how to print the Course data base are described in the SYSTEM OPTIONS section of this report under PRINT OPTIONS.

A sample output of the course file data is shown in the appendix.

INSTRUCTOR FILE SUBSYSTEM (MASTER TMS MENU OPTION "2")

Figure 7 shows the various options available to the user of the INSTRUCTOR FILE SUBSYSTEM.

Selecting option 2, Instructor File Subsystem, from the MASTER TMS MENU, will result in the following display:

```

#####
We are now on our way to the
next exciting subsystem of the
TRAINING MANAGEMENT DATA SYSTEM
[TMS INST]
#####

```

which will be immediately followed by:

```
TMS:  * INSTRUCTOR FILE SUBSYSTEM MENU *                                06/27/80
```

Option	Description of Subsystem
1	Update Instructor File
2	Print Instructor File
3	RE-Init Instructor File
.	Return to MASTER TMS MENU

```
Enter Option: #
```

OPTION "1" - UPDATE INSTRUCTOR FILE. Selecting option "1" from this menu will cause the program to display:

```

#####
We are now on our way to the
next exciting subsystem of the
TRAINING MANAGEMENT DATA SYSTEM
[TMS, IED]
#####

```

which will be immediately followed by:

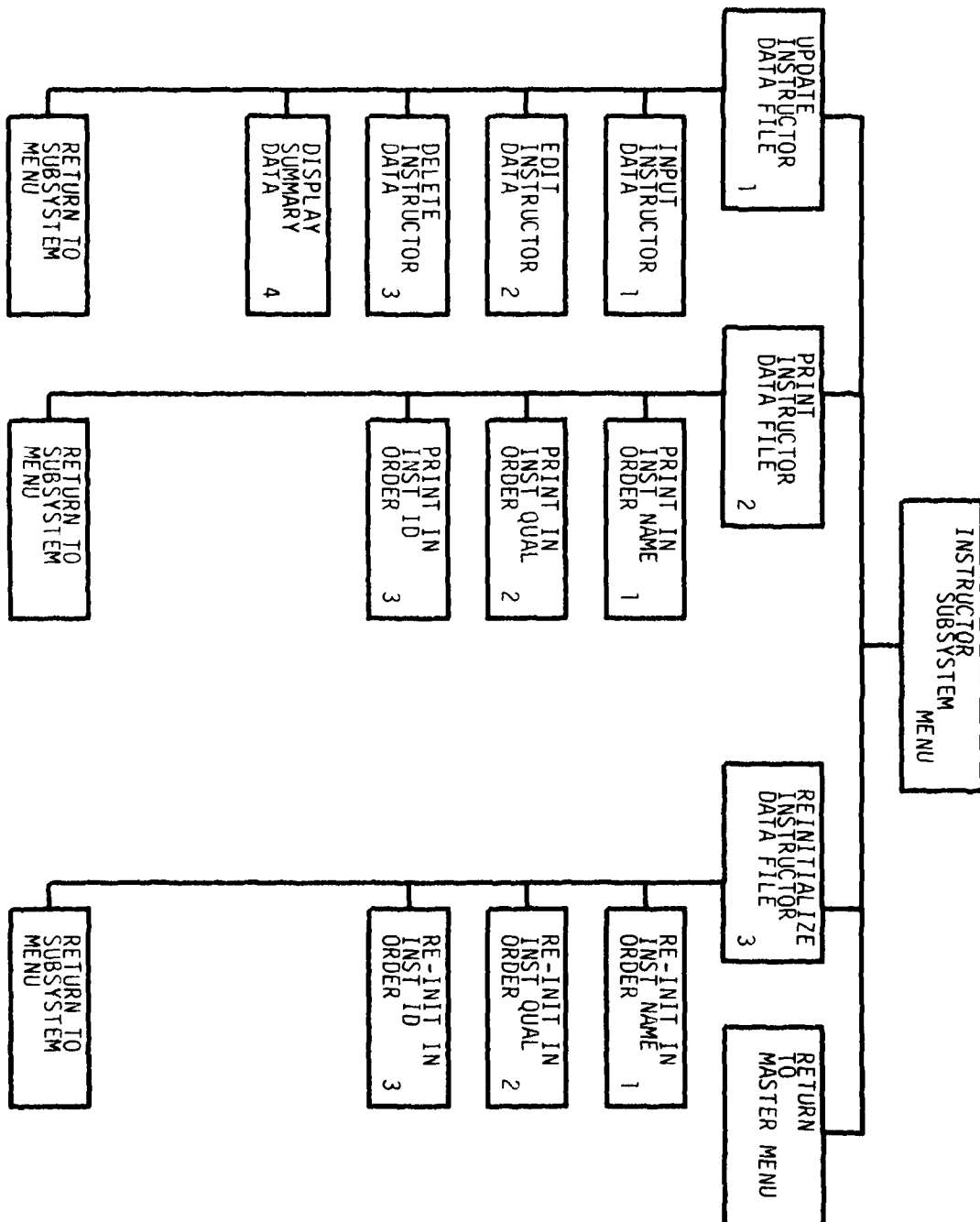


Figure 7. Instructor File Subsystem (Master TMS Menu Option "2")

TMS: INSTRUCTOR FILE UPDATE MENU		06/27/80
Option	Edit Operation	
1	Add to Instructor File	
2	Edit Instructor File Data	
3	Delete Instructor File Data	
4	Display Instructor Data Summary	
.	Exit and Return to Subsystem Menu	
Enter Option:		

Selecting option 1, 2, or 3 from the Instructor File Update Menu will cause the program to display:

TMS: INPUT INSTRUCTOR FILE DATA	06/27/80 R 3 S 7
Please Enter Instructor Name: #####	

For options 1, 2, and 3 entering the desired instructor name will cause the program to display:

TMS: INSTRUCTOR FILE DATA ENTRY - Menu 1	06/27/80 R 3 S 7
[1] Name] SUSAN	Date Last Reviewed] 06/27/80
[2] SSN] ID] S0001	Date Last Changed] 06/27/80
[3] Instructor Quals]	Primary Sec #1 Sec #2 Sec #3 Sec #4
[4] Rank/Rate]	Report Date] 0/ 0/ 0 PRD] 0/ 0/ 0
[5] Max Contact Hours	Annual] 4000 Weekly] 40 Daily] 8
[6] Inst Availability	Hours Used] 0 Utilization] 0.0 %
Enter Option (RECALL, RETURN, line #, Save, Help, Print):	

The inputting, editing, and deleting of the data items are described in the SYSTEM OPTIONS section of this report. Figure 8 gives a summary description of the data items shown above.

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<u>Line/Option</u>	<u>Description of Instructor Data Items</u>
1.	NAME. Used for instructor name. It is recommended to enter last name first, followed by initials with space. Maximum length is 24 characters, including spaces.
2.	SSN. A field of nine alphanumeric length for instructor social security number. Do not enter "-"s. ID. An instructor code internally maintained by the system.
3.	INSTRUCTOR QUAL. A field of four characters for instructor qualifications. Any value can be assigned. To be useful the qualification you assign here must match the qualification assigned to the module instructor qualification in the Course File Data Base.
4.	RANK/RATE. A field of five alphanumeric length for instructor rank or rate.
5.	MAXIMUM CONTACT HOURS. This field allows you to specify the maximum hours that an instructor may be used during the 50 week fiscal year.
6.	INSTRUCTOR AVAILABILITY. This will allow the user to block out the periods in which the instructor is unavailable for class assignment.

Figure 8. Summary of Instructor File Data Items

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Item 6 enables the user to update the instructor's availability table. The procedure for this is described in the SYSTEM OPTIONS section of this report under UPDATE AVAILABILITY TABLE.

Option 4, of the Instructor File Update Menu, provides the user with the capability to review instructor data. Selecting option 4 will cause the screen to display:

```

TMS:  DISPLAY INSTRUCTOR SUMMARY DATA      06/27/80  R 3  S 7
      Please enter output device (CRT or LPT):  CRT
      Please enter Output Option (1-3):  1
                1 - Output by Instructor Name
                2 - Output by Instructor Qualification
                3 - Output by Instructor ID
    
```

Three display options are available. Display options 1, 2, and 3 will display summary data by instructor name (alphabetically), by instructor qualifications, and instructor ID, respectively. The following is a sample display by instructor name:

TMS: DISPLAY INSTRUCTOR SUMMARY DATA 06/27/80 R 3 S 7 [1]							
Inst ID	Instructor Name	Rank Rate	Pri Qual	Hours Avail	Hours Used	Utilization	
C0001	CHUCK			4000	0	0.0	%
K0001	KAY			4000	0	0.0	%
M0001	MARY			4000	0	0.0	%
M0002	MONA			4000	0	0.0	%
M0003	MARY ANNE			4000	0	0.0	%
S0001	SUSAN			4000	0	0.0	%
S0002	SHARON			4000	0	0.0	%
S0003	SARA			4000	0	0.0	%
S0004	SANDY			4000	0	0.0	%
* ;; END OF LIST ;; Touch RETURN or RECALL to return to menu							

OPTION "2" - PRINT INSTRUCTOR FILE. Choosing option "2" on the Instructor File Subsystem Menu will cause the program to display:

TMS: DISPLAY INSTRUCTOR FILE DATA		08/20/80 R 3 S 1
Option	Output Sequence	
1	Output by Instructor Name	
2	Output by Instructor Qualification	
3	Output by Instructor ID	
.	Return to Subsystem Menu	
Please enter Option: #		

As shown in the Menu, the instructor file can be printed by instructor name, instructor qualification, and instructor ID. The procedures on how to print the Instructor data base are described in the SYSTEM OPTIONS section of this report under PRINT OPTIONS. A sample output of the instructor file data is shown in the appendix.

OPTION "3" - RE-INITIALIZE INSTRUCTOR FILE. This option of the Instructor File Subsystem will allow the user to clear the availability table for all or some of the instructors defined in the Instructor Data Base. This option should always be selected before the generation of a preliminary schedule (Schedule File Subsystem Option 1).

Choosing option "3" on the Instructor File Subsystem Menu will cause the program to display:

TMS: RE-INIT INSTRUCTOR FILE DATA		08/20/80 R 3 S 1
Option	Output Sequence	
1	Re-init by Instructor Name	
2	Re-init by Instructor Qualification	
3	Re-init by Instructor ID	
.	Return to Subsystem Menu	
Please enter Option: #		

The operation of this program is similar to the print program. The procedures on how to print the Instructor Data Base are described in the SYSTEM OPTIONS section of this report under PRINT OPTIONS.

FACILITY FILE SUBSYSTEM (MASTER TMS MENU OPTION "3")

Figure 9 shows the various options available to the user of the FACILITY FILE SUBSYSTEM.

Selecting option 3, Facility File Subsystem, from the MASTER TMS MENU, will result in the following display:

```

#####
We are now on our way to the
next exciting subsystem of the
TRAINING MANAGEMENT DATA SYSTEM
[TMS.FAC]
#####
    
```

which will be immediately followed by:

TMS: * FACILITY FILE SUBSYSTEM MENU *		06/27/80
Option	Description of Subsystem	
1	Update Facility File	
2	Print Facility File	
3	RE-Init Facility File	
.	Return to MASTER TMS MENU	
Enter Option: #		

OPTION "1" - UPDATE FACILITY FILE. Selecting option "1" from this menu will cause the program to display:

```

#####
We are now on our way to the
next exciting subsystem of the
TRAINING MANAGEMENT DATA SYSTEM
[TMS.FEDT]
#####
    
```

which will be immediately followed by:

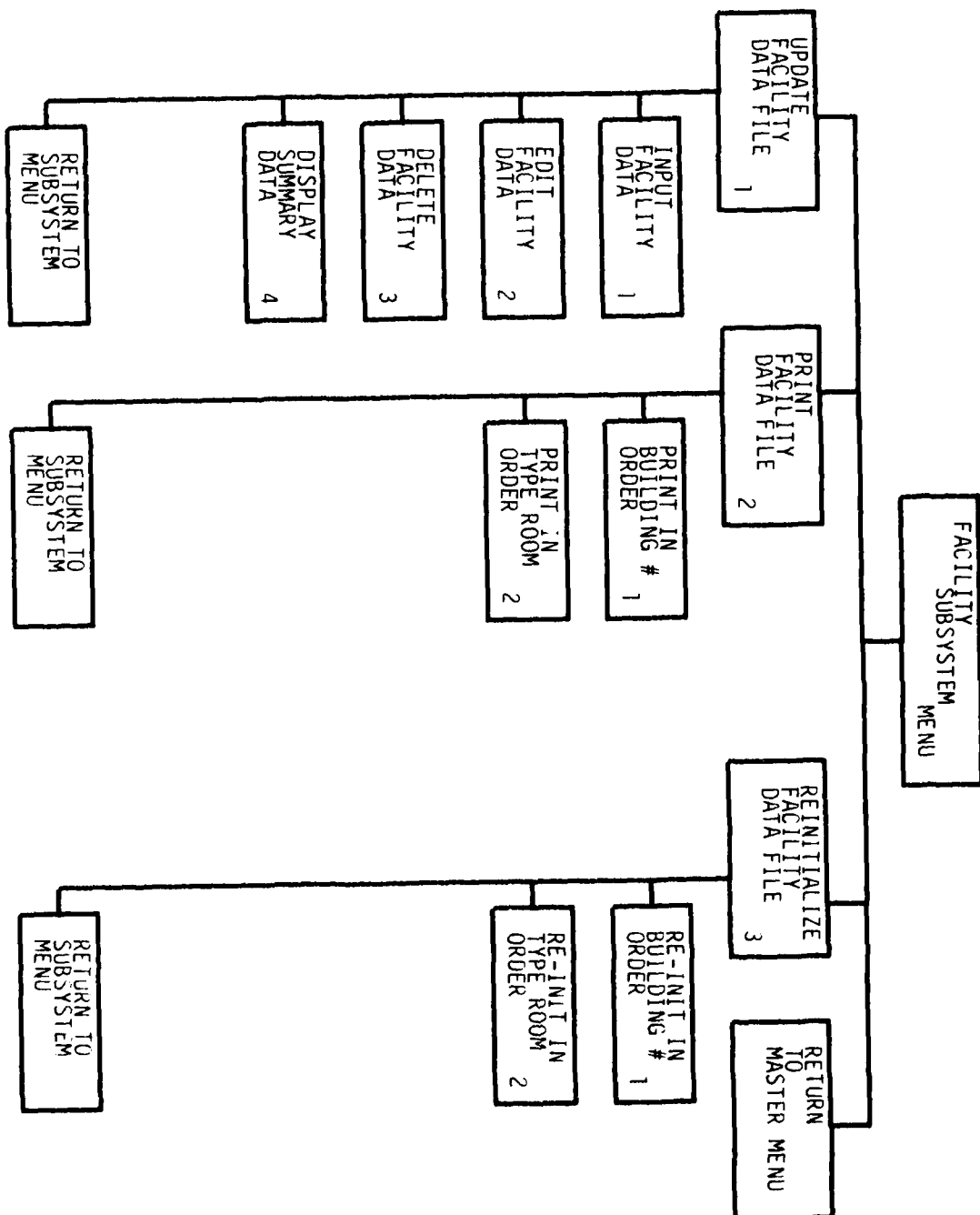


Figure 9. Facility File Subsystem (Master IMS Menu Option "3")

TMS: FACILITY FILE UPDATE MENU		06/27/80
Option	Edit Operation	
1	Add to Facility File	
2	Edit Facility File Data	
3	Delete Facility File Data	
4	Display Facility Data Summary	
.	Exit and Return to Subsystem Menu	
Enter Option:		

Selecting option 1, 2, or 3 from the Facility File Update Menu will cause the program to display:

TMS: INPUT FACILITY FILE DATA	06/27/80 R 3 S 7
Please Enter Building Number: ####	
Please Enter Room Number (rrr.ss): #####	

For options 1, 2, and 3 entering the desired building and room number will cause the program to display:

TMS: FACILITY FILE DATA ENTRY - Menu 1		08/24/80 R 3 S 7
[1] Type Room: 1	Date Last Reviewed: 08/20/80	
Special Qual:	Data Last Changed:	
[2] Building Number: 1111		
[3] Room Number: 11.11		
[5] Building Name:		
simulator test room (multi-stage bb stacker)		
[6] Room Availability	[7] Hours Room is Available:	4000
Hours Used: 0	Utilization:	0.0 %
Enter Option (RECALL, RETURN, line #, Save, Help, Print): #		

The inputting, editing, and deleting of the data items are described in the SYSTEM OPTIONS section of this report. Figure 10 gives a summary description of the data items shown above.

Line/Option	Description of Facility Data Items
1.	Type Room. This is a two digit code to describe the type of room being defined. Five suggested values are: 00 - Special, 01 - Theory, 02 - Lab, 03 - Theory and Lab, and 04 - Trainer. A user may enter any other value into this field to match any requirements they may have. When a value of "00" is entered the user must define a 16 character "Special Qualification" field to be used to identify the room.
2.	Building Number. A five character code which identifies the building.
3.	Room Number. A six character code which identifies the room.
4.	Room Size. A number which represents the largest size class which may be scheduled in the room.
5.	Building Name. A 64 character field in which the user may describe the room.
6.	Room Availability. This will allow the user to declare period in which the room is unavailable for use.
7.	Hours Room is Available. This is the total number of hours in which the room is available for use throughout the year.

Figure 10. Summary of Facility File Data Items

Item 6 enables the user to update the facilities' availability table. The procedure for this is described in the SYSTEM OPTIONS section of this report under UPDATE AVAILABILITY TABLE.

Option 4, of the Facility File Update Menu, provides the user with the capability to review facility data. Selecting option 4 will cause the screen to display:

```

TMS:  DISPLAY FACILITY SUMMARY DATA          06/27/80  R 3  S 7
Please enter output device (CRT or LPT):  CRT
Please enter Output Option (1-2):  1
      1 - Output by Building Number
      2 - Output by Type of Room
  
```

Two display options are available. Display options 1 and 2 will display summary data by building/room number and type of room, respectively. The following is a sample output by building number:

TMS: DISPLAY FACILITY SUMMARY DATA 06/27/80 R 3 S 7 [1]							
Type Room	Bliding Number	Room Number	Special Qualification	Room Size	Hours Avail	Hours Used	Utilization
01	1	001.00		40	2040	1952	95.6 %
01	1	001.01		29	2040	1888	92.5 %
01	1	001.02		30	2040	1928	94.5 %
01	1	001.03		35	2040	2040	100.0 %
01	1	001.04		50	2040	2016	98.8 %
02	1	001.05		120	4000	0	0.0 %
01	1	001.06		50	2040	1880	92.1 %
03	1	001.07		12	4000	752	18.8 %
03	1	001.08		8	4000	1976	49.4 %
* ;; END OF LIST ;; Touch RETURN or RECALL to return to menu							

OPTION "2" - PRINT FACILITY FILE. Choosing option "2" on the Facility Subsystem Menu will cause the program to display:

TMS: DISPLAY FACILITY FILE DATA		08/20/80 R 3 S 1
Option	Output Sequence	
1	Output by Building Number	
2	Output by Type of Room	
.	Return to Subsystem Menu	
Please enter Option: #		

As shown in the Menu, the facility file can be printed by building/room number, and by type of room. The procedures on how to print the Facility Data Base are described in the SYSTEM OPTIONS section of this report under PRINT OPTIONS. A sample output of the facility file data is shown in the appendix.

OPTION "3" - RE-INITIALIZE FACILITY FILE. This option of the Facility File Subsystem will allow the user to clear the availability table for all or some of the rooms defined in the Facility Data Base. This option should always be selected before the generation of a preliminary schedule (Schedule File Subsystem Option 1).

Choosing option "3" on the Facility File Subsystem Menu will cause the program to display:

TMS: RE-INIT FACILITY FILE DAT		08/20/80 R 3 S 1
Option	Output Sequence	
1	Re-init by Building Numbe	
2	Re-init by Type of Room	
.	Return to Subsystem Menu	
Please enter Option: #		

The operation of this program is similar to the print program. The procedures on how to print the Facility Data Base are described in the SYSTEM OPTIONS section of this report under PRINT OPTIONS.

SCHEDULE FILE SUBSYSTEM (MASTER TMS MENU OPTION "4")

Figure 11 shows the various options available to the user of the SCHEDULE FILE SUBSYSTEM.

Selecting option 4, SCHEDULE FILE SUBSYSTEM, from the MASTER TMS MENU, followed by pressing RETURN will result in the following display:

```

#####
We are now on our way to the
next exciting subsystem of the
TRAINING MANAGEMENT DATA SYSTEM
[TMS SCHED]
#####
    
```

which will be immediately followed by:

```

TMS:  * SCHEDULE FILE SUBSYSTEM MENU *                06/27/80
-----
Option | Description of Subsystem
-----|-----
1      | Generate Preliminary Schedule
2      | Review, Update FY Schedule
3      | Print Schedule Reports
.      | Return to MASTER TMS MENU
Enter Option: #
    
```

OPTION "1" - GENERATE PRELIMINARY SCHEDULE. Selecting option 1 causes the screen to display:

```

TMS:  SCHEDULE GENERATION                07/31/80  R 3  C 1

]]]]]]]]]]]] Attention []]]]]]]]]]]]

This program requires that all data files be available.
This includes the COURSE, INSTRUCTOR, FACILITY, and
SCHEDULE Data Files.

If necessary, you may remove the PROGRAM disk. Upon
completion, this program will pause and ask that the
PROGRAM disk be Re-mounted.

* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *
    
```

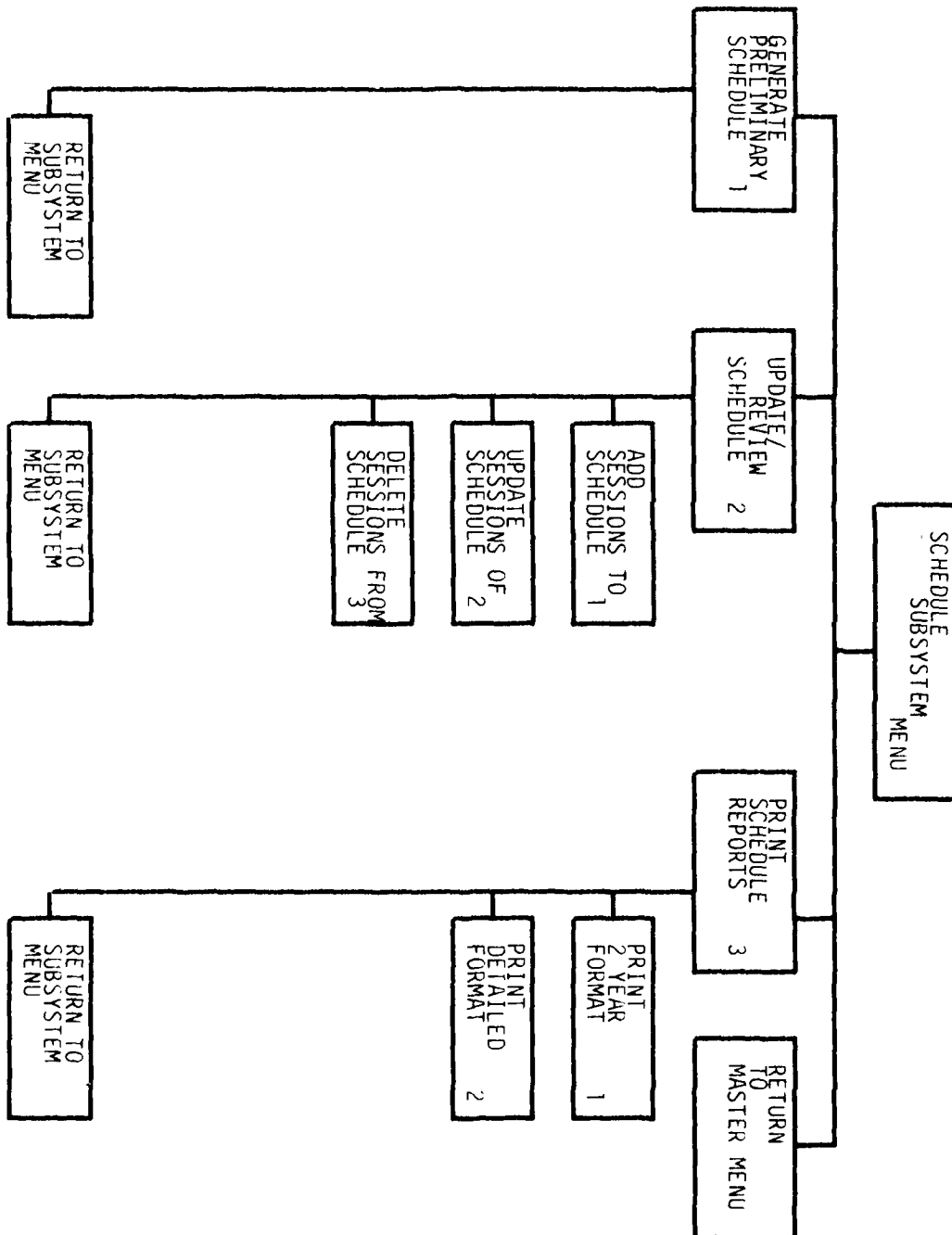



Figure 11. Schedule File Subsystem (Master TMS Menu Option "4")

If the user needs help, touching any character will cause the program to display the following screens of information. (Note: the contents of these screens may be changed using Special Support Option 1, see the SPECIAL SUPPORT SUBSYSTEM section of this report for more information.)

```

TMS: SCHEDULE GENERATION                                08/20/80 R 3 S 1
Generation of the schedule should not be attempted unless the
following conditions are met.

1. All courses in the Course File subsystem have been
   created and updated to reflect the most current
   number of convenings and convening frequency and that
   all modules be defined.

2. The Instructor and Facility Files have been
   re-initialized (option 3 of the Instructor/Facility
   subsystem menu).

* Touch RETURN for more Help or RECALL to return to menu *
```

```

TMS: SCHEDULE GENERATION                                08/20/80 R 3 S 1
The last, but most important

3. That ALL the Schedule Subsystem Data Files be
   initialized using option D of the Special Support
   Subsystem (option 3 - Master Menu). Under option D
   be sure to select ONLY option 4 (Schedule Data Files).

Now, and only now, are you ready to generate a schedule.

* Touch RETURN for more Help or RECALL to return to menu *
```

Should the Schedule Data File contain data the program will display the following:

```

TMS: SCHEDULE GENERATION                                07/31/80 R 3 S 1

]]]]]]]]] W A R N I N G []]]]]]]]]

The schedule file currently contains data. This data
may conflict with new data generated by this program.
In the event of conflict the old data record is
preserved.

If you wish to CONTINUE touch RETURN, otherwise touch
RECALL and re-initialize the SCHEDULE Data Files.

* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *
```

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Once all the data files have been properly prepared and mounted the program will ask the user if they wish the program to make instructor and facility assignments. The program does this by displaying the following:

```

TMS: SCHEDULE GENERATION                07/31/80  R 3  S 1
Do you wish to assign Instructors (Y or N)? #
Do you wish to assign Facilities (Y or N)? #
    
```

Once the user has selected the desired options the program will begin to build the Schedule data file for all courses contained in the Course data file. As session data is being generated the program will display the following showing the various course assignments.

```

TMS: SCHEDULE GENERATION                07/31/80  R 3  S 1
Do you wish to assign Instructors (Y or N)? Y
Do you wish to assign Facilities (Y or N)? Y
The session below has just been saved:
  cdp|shift|convening|module|session|beg day|inst|bld|room|
  0143|1|81.001|1|1|1|B0002|1|001.00|
  inst - BEAGLES
  room - FLIGHT TRAINER
    
```

Once all courses have been processed the program will display:

```

TMS: SCHEDULE GENERATION                07/31/80  R 3  S 1

      ]]]]]]]] Attention []]]]]]]]
      This program has completed execution and has closed
      all open data files.  If you have removed the
      PROGRAM disk, you may Re-mount it at this time.

* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *
    
```

Upon touching RETURN the program will return to the Schedule Subsystem Menu.

OPTION "2" - REVIEW AND UPDATE FISCAL SCHEDULE. Selection of option "2" on the Schedule File Subsystem Menu will cause the program to display:

TMS: SCHEDULE MODIFICATION	07/31/80 R 3 S 1
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p>]]]]]]]]]]]] Attention []]]]]]]]]]]]</p> <p>This program requires that all data files be available. This includes the COURSE, INSTRUCTOR, FACILITY, and SCHEDULE Data Files.</p> <p>If necessary, you may remove the PROGRAM disk. Upon completion, this program will pause and ask that the PROGRAM disk be Re-mounted.</p> </div>	
* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *	

Touching RETURN will cause the program to proceed with the program and display the following:

TMS: SCHEDULE MODIFICATION	07/30/80 R 3 S 1										
<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%; border-bottom: 1px solid black;">Option</th> <th style="border-bottom: 1px solid black;">Update Function</th> </tr> <tr> <td style="text-align: center;">1</td> <td>Add Sessions to Schedule</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Update Sessions from Schedule</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Delete Sessions from Schedule</td> </tr> <tr> <td style="text-align: center;">.</td> <td>Return to Schedule Subsystem Menu</td> </tr> </table>	Option	Update Function	1	Add Sessions to Schedule	2	Update Sessions from Schedule	3	Delete Sessions from Schedule	.	Return to Schedule Subsystem Menu	
Option	Update Function										
1	Add Sessions to Schedule										
2	Update Sessions from Schedule										
3	Delete Sessions from Schedule										
.	Return to Schedule Subsystem Menu										
Enter Option:											

For options 1, 2, and 3, the program will display:

TMS: SCHEDULE MODIFICATION	07/30/80 R 3 S 1												
<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>Update the following session of the Schedule File</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;">cdp</th> <th style="width: 25%;">short title</th> <th style="width: 10%;">shift</th> <th style="width: 20%;">convening</th> <th style="width: 15%;">module</th> <th style="width: 15%;">session</th> </tr> <tr> <td style="text-align: center;">####</td> <td></td> <td style="text-align: center;">#</td> <td style="text-align: center;">##.###</td> <td style="text-align: center;">##</td> <td style="text-align: center;">##</td> </tr> </table> </div>		cdp	short title	shift	convening	module	session	####		#	##.###	##	##
cdp	short title	shift	convening	module	session								
####		#	##.###	##	##								

Upon entering the requested information, the program will look up the session record and display the following:

TMS: SCHEDULE MODIFICATION					07/30/80 R 3 S 1	
Update the following session of the Schedule File						
cdp	short title	shift	convening	module	session	
1111	adv bb stacking	1	81.001	1	1	
	Date	Instructor Name	Bldg #	Room #		
[1]	10/ 6/80	susan	2047	3		
(.Lookup may be used for Instructor and/or Bldg to search file)						
Enter Option (RECALL, RETURN, line #, Save, Help, Print): #						

The inputting, editing, and deleting of the data items are described in the SYSTEM OPTIONS section of this report.

Touching RETURN without entering a CDP number will cause the program to display:

TMS: SCHEDULE MODIFICATION		07/31/80 R 3 S 1	
<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>]]]]]]]] Attention []]]]]]]]</p> <p>This program has completed execution and has closed all open data files. If you have removed the PROGRAM disk, you may Re-mount it at this time.</p> </div>			
* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *			

Upon touching RETURN the program will return to the Schedule Subsystem Menu.

OPTION "3" - PRINT SCHEDULE REPORTS. Selection of option "3" on the Schedule File Subsystem Menu will cause the program to display:

```

TMS:  * SCHEDULE REPORT SELECTION MENU *    07/31/80  R 3  S 1
      Option | Description of Subsystem
      -----|-----
          1 | Single-Page 2 Year Graphic Report
          2 | Single-Page Detail Format Reports
          . | Return to SCHEDULE SUBSYSTEM MENU
Enter Option: #
    
```

Selection of option "1" from the Schedule Report Selection Menu will cause the program to display:

```

TMS:  REPORT 1A GENERATION                    07/31/80  R 3  S 1

      ]..]]]]]]]]] Attention [.....]
      This program requires that all data files be available.
      This includes the COURSE, INSTRUCTOR, FACILITY, and
      SCHEDULE Data Files.

      If necessary, you may remove the PROGRAM disk. Upon
      completion, this program will pause and ask that the
      PROGRAM disk be Re-mounted.

* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *
    
```

Touching RETURN will cause the program to proceed with the program and display the following:

```

TMS:  REPORT 1A GENERATION                    07/31/80  R 3  S 1
      Option | Output Sequence
      -----|-----
          1 | Output by CDP
          2 | Output by Priority
          3 | Output by CIN
          4 | Output by Short Title
Enter Option: #
    
```

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From this point the program operates as described in the SYSTEM OPTIONS section of this report under PRINT OPTIONS.

Upon completion of printing the report the program will display:

```
TMS:  REPORT 1A GENERATION                07/31/80  R 3  S 1

      ]]]]]]]]  Attention  []]]]]]]]]
      This program has completed execution and has closed
      all open data files.  If you have removed the
      PROGRAM disk, you may Re-mount it at this time.

* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *
```

Upon touching RETURN the program will return to the Schedule Report Selection Menu. Figure 12 shows an example of the 2 Year Graphic Format Report.

Selection of option "2" from the Schedule Report Selection Menu will cause the program to display:

```
TMS:  * REPORT 2 SELECTION MENU *          07/31/80  R 3  S 1

  Option | Description of Subsystem
  -----|-----
      1  | Single-Page Detail Format by Course
      2  | Single-Page Detail Format by Instructor
      3  | Single-Page Detail Format by Facility
      4  | Single-Page Detail Format by Convening Day
      .  | Return to REPORT SELECTION MENU
Enter Option: #
```

Selection of option 1, 2, 3, or 4 from the above menu will cause the program to display:

COP	CIN	RMS	PRIORITY	SHORT TITLE	LONG TITLE
0143	A 02G 0014	AHAA	0.000	MINE CM OF	

CLASS SIZE	CLASS END	COURSE LENGTH	INSTRUCTORS			SUPPORT			TRAINERS	
			MANPOWER AUTHORIZED	ONBOARD	REQUIRED	MANPOWER AUTHORIZED	ONBOARD	AVAILABLE	REQUIRED	
16	14	3	2		1	1	1	1	1	
NUMBER OF MODULES	START DATE		CONVERTINGS			CONCURRENT			AVERAGE ON-BOARD	
	WEEK		SHIFT 1 CLASSES / FREQ	SHIFT 2 CLASSES / FREQ	SHIFT 3 CLASSES / FREQ					
2	1 AUG 13	1 MIN	3 / 0	0 / 0	0 / 0	0.00			4.0	

[illegible]

***** (87.003)

***** (81.001)

***** (81.002)

123

FIRST SESSION INSTRUCTOR/FACILITY DATA SUMMARY							
CONV.		INSTRUCTOR NAME	ROOM NUMBER	CONV.		INSTRUCTOR NAME	ROOM NUMBER
81 001		BEAGLES	1 /001.00	81.002		BEAGLES	1 /001.00
				81.003		BEAGLES	1 /001.00

Figure 12. Sample of 2 Year Graphic Format Report

TMS: REPORT 2x GENERATION	07/31/80 R 3 S 1
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p>]]]]]]]]]] Attention []]]]]]]]]]</p> <p>This program requires that all data files be available. This includes the COURSE, INSTRUCTOR, FACILITY, and SCHEDULE Data Files.</p> <p>If necessary, you may remove the PROGRAM disk. Upon completion, this program will pause and ask that the PROGRAM disk be Re-mounted.</p> </div>	
* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *	

Touching RETURN will cause the program to proceed with the program and display the following:

TMS: REPORT 2x GENERATION	07/31/80 R 3 S 1										
<table style="margin: auto;"> <tr> <th style="border-right: 1px solid black; padding: 5px;">Option</th> <th style="padding: 5px;">Output Sequence</th> </tr> <tr> <td style="border-right: 1px solid black; text-align: center; padding: 5px;">1</td> <td style="padding: 5px;">Output by CDP</td> </tr> <tr> <td style="border-right: 1px solid black; text-align: center; padding: 5px;">2</td> <td style="padding: 5px;">Output by Priority</td> </tr> <tr> <td style="border-right: 1px solid black; text-align: center; padding: 5px;">3</td> <td style="padding: 5px;">Output by CIN</td> </tr> <tr> <td style="border-right: 1px solid black; text-align: center; padding: 5px;">4</td> <td style="padding: 5px;">Output by Short Title</td> </tr> </table>	Option	Output Sequence	1	Output by CDP	2	Output by Priority	3	Output by CIN	4	Output by Short Title	
Option	Output Sequence										
1	Output by CDP										
2	Output by Priority										
3	Output by CIN										
4	Output by Short Title										
Enter Option: #											

From this point the program operates as described in the SYSTEM OPTIONS section of this report under PRINT OPTIONS.

Upon completion of printing the report the program will display:

TMS: REPORT 2x GENERATION	07/31/80 R 3 S 1
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p>]]]]]]]]]] Attention []]]]]]]]]]</p> <p>This program has completed execution and has closed all open data files. If you have removed the PROGRAM disk, you may Re-mount it at this time.</p> </div>	
* ;; END OF HELP ;; Touch RETURN or RECALL to return to menu *	

Upon touching RETURN the program will return to the Schedule Report Selection Menu. Figure 13 shows an example of the Detail Format Report.

CDP	CONVENING	SHIFT	TITLE	MODULE / SESSION	START / END	BUILDING	ROOM	INSTRUCTOR
0143	81.001	1	MINE CM OF	1 / 1 2 / 1	18 AUG 80 - 12 SEP 80 15 SEP 80 - 1 OCT 80	1	001.00 001.00	BEAGLES BEAGLES
0143	81.002	1	MINE CM OF	1 / 1 2 / 1	11 DEC 80 - 21 JAN 81 22 JAN 81 - 9 FEB 81	1	001.00 001.00	BEAGLES BEAGLES
0143	81.003	1	MINE CM OF	1 / 1 2 / 1	21 APR 81 - 18 MAY 81 19 MAY 81 - 4 JUN 81	1	001.00 001.00	BEAGLES BEAGLES
0148	81.001	1	MW PLAN FUND	1 / 1 2 / 1	18 AUG 80 - 15 SEP 80 16 SEP 80 - 22 SEP 80	1	001.02 001.07	HALL TROTTA
0148	81.002	1	MW PLAN FUND	1 / 1 2 / 1	9 SEP 80 - 7 OCT 80 8 OCT 80 - 14 OCT 80	1	001.03 001.07	HELLER TROTTA
0148	81.003	1	MW PLAN FUND	1 / 1 2 / 1	1 OCT 80 - 29 OCT 80 30 OCT 80 - 5 NOV 80	1	001.02 001.07	HALL TROTTA
0148	81.004	1	MW PLAN FUND	1 / 1 2 / 1	23 OCT 80 - 20 NOV 80 21 NOV 80 - 27 NOV 80	1	001.00 001.07	HELLER TROTTA
0148	81.005	1	MW PLAN FUND	1 / 1 2 / 1	14 NOV 80 - 12 DEC 80 15 DEC 80 - 19 DEC 80	1	001.02 001.07	HALL TROTTA
0148	81.006	1	MW PLAN FUND	1 / 1 2 / 1	8 DEC 80 - 19 JAN 81 22 JAN 81 - 9 FEB 81	1	001.03 001.07	HELLER HELLER
015K	81.001	1	6L16 02 GEN OM	1 / 1 1 / 2	18 AUG 80 - 15 SEP 80 18 AUG 80 - 15 SEP 80	.TBA. .TBA.	.TBA. .TBA.	STAFF STAFF
015K	81.002	1	6L16 02 GEN OM	1 / 1 1 / 2	12 SEP 80 - 10 OCT 80 12 SEP 80 - 10 OCT 80	.TBA. .TBA.	.TBA. .TBA.	STAFF STAFF
015K	81.003	1	6L16 02 GEN OM	1 / 1 1 / 2	9 OCT 80 - 6 NOV 80 9 OCT 80 - 6 NOV 80	.TBA. .TBA.	.TBA. .TBA.	STAFF STAFF
015K	81.004	1	6L16 02 GEN OM	1 / 1 1 / 2	5 NOV 80 - 3 DEC 80 5 NOV 80 - 3 DEC 80	.TBA. .TBA.	.TBA. .TBA.	STAFF STAFF

Figure 13. Sample of Detail Format Report

CALENDAR FILE SUBSYSEM (MASTER TMS MENU OPTION "5")

Figure 14 shows the various options available to the user of the TMS Calendar File Subsystem.

Selecting option "5", Calendar File Subsystem, from the MASTER TMS MENU will cause the system to display:

```

$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
$$$  We are now on our way to the  $$$
$$$  next exciting subsystem of the  $$$
$$$  TRAINING MANAGEMENT DATA SYSTEM  $$$
$$$  [TMS.CAL]  $$$
$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
    
```

which will be immediately followed by:

```

TMS:  * CALENDAR FILE SUBSYSTEM MENU *          06/27/80  R 3  S 1
      Option | Description of Subsystem
      -----|-----
          1 | Generate FY Calendar
          2 | Print FY Calendar
          . | Return to MASTER TMS MENU
Enter Option: #
    
```

OPTION "1" - GENERATE FISCAL YEAR CALENDAR. Selecting option 1 causes the screen to display:

```

TMS:  * CALENDAR FILE SUBSYSTEM MENU *          06/27/80  R 3  S 1
Enter Starting Date of Calendar (mm/dd/yyyy):  ##/##/####
    
```

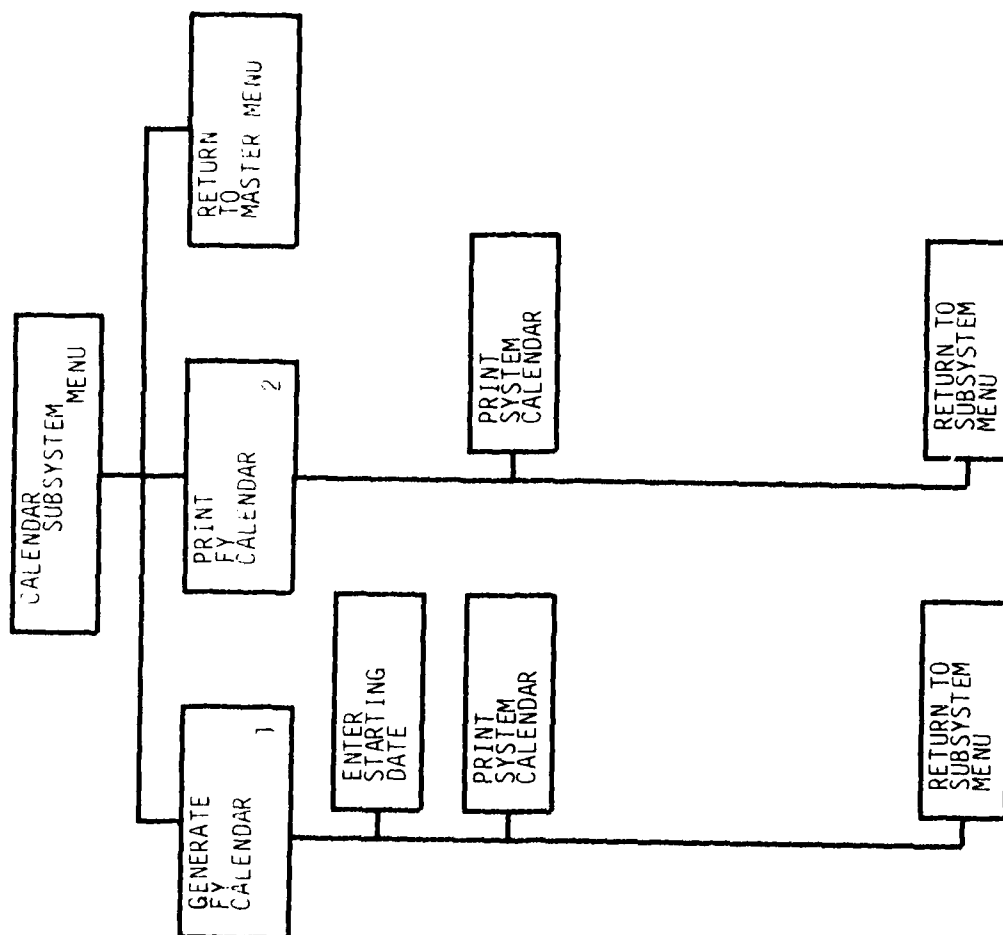


Figure 14. Calendar File Subsystem (Master TMS Menu Option "5")

Entering the starting date will cause the program to begin construction of the system calendar. The construction of the calendar is done in two parts. First, a table of holidays is built. While the table is being generated the program will display the following status information:

```

TMS:  CALENDAR GENERATION                                08/20/80  R 3  S 1
Enter Starting Date of Calendar (mm/dd/yyyy): 10/01/1980

Computing Holiday:    New Years Day 1980
                     Washingtons Birth 1980
                     Memorial Day 1980
                     4th of July 1980
                     Labor Day 1980
                     Columbus Day 1980
                     Veterans Day 1980
                     Turkey Day 1980
    
```

The second step is the computation of the starting day of each of the 100 weeks of the calendar. While the table is being built the program will display the following status information:

```

TMS:  CALENDAR GENERATION                                08/20/80  R 3  S 1
Enter Starting Date of Calendar (mm/dd/yyyy): 10/01/1980
      Week Starting this date, completed.

0000NNNNDDDDJJJJFFFFMMMMMAAAAMMMJJJJ
CCCC0000EEEEAAAAEEEEAAAAAPPPAAAAUUUU
TTTTVVVVCCCCNNNNBBBBRRRRRRRRRRYYYYNNNN

0122011200120112001200123012201120012
6407307418595296297329630630741861852

88888888888888888888888888888888888888
000000000000111111111111111111111111
    
```

When all starting dates have been displayed, the screen will display:

```

TMS:  CALENDAR GENERATION                                08/20/80  R 3  S 1
Enter Starting Date of Calendar (mm/dd/yyyy): 10/01/1980
Do you wish to print the System Calendar (Yes/No): #
    
```

Entering a "Y" will cause the program to print the system calendar on the line printer, an example of the calendar is shown in figure 15. When completed the Calendar File Subsystem Menu is displayed.

Entering a "N" will cause the program to display the Calendar File Subsystem Menu.

OPTION "2" - PRINT FISCAL YEAR CALENDAR. Selecting option 2 from the Calendar File Subsystem Menu will cause the program to display:

TMS: PRINT SYSTEM CALENDAR	08/20/80 R 3 S 1
Do you wish to print the System Calendar (Yes/No): #	

Entering a "Y" will cause the program to print the system calendar on the line printer. An example of the calendar is shown in figure 15. When completed the Calendar File Subsystem Menu is displayed.

Entering a "N" will cause the program to display the Calendar File Subsystem Menu.

TRAINING MANAGEMENT SYSTEM:

Week	Mth	Year	Mon	Tue	Wed	Thur	Fri
1	OCT	1980	6h	7	8	9	10
2	OCT	1980	13h	14	15	16	17
3	OCT	1980	20h	21	22	23	24
4	OCT	1980	27	28	29	30	31
5	NOV	1980	3	4	5	6	7
6	NOV	1980	10	11	12	13	14
7	NOV	1980	17	18	19	20	21
8	NOV	1980	24	25	26	27	28
9	DEC	1980	1	2	3	4	5
10	DEC	1980	8	9	10	11	12
11	DEC	1980	15	16	17	18	19
12	DEC	1980	22	23	24	25	26
13	JAN	1981	29	30	31		
14	JAN	1981					
15	JAN	1981					
16	FEB	1981					
17	FEB	1981					
18	FEB	1981					
19	FEB	1981					
20	MAR	1981					
21	MAR	1981					
22	MAR	1981					
23	MAR	1981					
24	MAR	1981					
25	APR	1981					
26	APR	1981					
27	APR	1981					
28	APR	1981					
29	MAY	1981					
30	MAY	1981					
31	MAY	1981					
32	JUN	1981					
33	JUN	1981					
34	JUN	1981					
35	JUN	1981					
36	JUN	1981					
37	JUL	1981					
38	JUL	1981					
39	JUL	1981					
40	SEP	1981					
41	SEP	1981					
42	SEP	1981					

SYSTEM CALENDAR

Week	Mth	Year	Mon	Tue	Wed	Thur	Fri
1	OCT	1981	5h	6	7	8	9
2	OCT	1981	12h	13	14	15	16
3	OCT	1981	19	20	21	22	23
4	OCT	1981	26	27	28	29	30
5	NOV	1981	3	4	5	6	7
6	NOV	1981	10	11	12	13	14
7	NOV	1981	17	18	19	20	21
8	NOV	1981	24	25	26	27	28
9	DEC	1981	1	2	3	4	5
10	DEC	1981	8	9	10	11	12
11	DEC	1981	15	16	17	18	19
12	DEC	1981	22	23	24	25	26
13	JAN	1982	29	30	31		
14	JAN	1982					
15	JAN	1982					
16	FEB	1982					
17	FEB	1982					
18	FEB	1982					
19	FEB	1982					
20	MAR	1982					
21	MAR	1982					
22	MAR	1982					
23	MAR	1982					
24	MAR	1982					
25	APR	1982					
26	APR	1982					
27	APR	1982					
28	APR	1982					
29	MAY	1982					
30	MAY	1982					
31	MAY	1982					
32	JUN	1982					
33	JUN	1982					
34	JUN	1982					
35	JUN	1982					
36	JUN	1982					
37	JUL	1982					
38	JUL	1982					
39	JUL	1982					
40	SEP	1982					
41	SEP	1982					
42	SEP	1982					

1980
JAN 1 NEW YEAR
FEB 18 PRESIDENTS DAY
MAY 26 MEMORIAL DAY
JUL 4 4TH OF JULY
SEP 13 LABOR DAY
OCT 13 COLUMBUS DAY
NOV 11 VETERANS DAY
NOV 27 TURKEY DAY
DEC 25 CHRISTMAS

1981
JAN 1 NEW YEAR
FEB 16 PRESIDENTS DAY
MAY 24 MEMORIAL DAY
JUL 4 4TH OF JULY
SEP 13 LABOR DAY
OCT 13 COLUMBUS DAY
NOV 11 VETERANS DAY
NOV 27 TURKEY DAY
DEC 25 CHRISTMAS

1982
JAN 1 NEW YEAR
FEB 16 PRESIDENTS DAY
MAY 24 MEMORIAL DAY
JUL 4 4TH OF JULY
SEP 13 LABOR DAY
OCT 13 COLUMBUS DAY
NOV 11 VETERANS DAY
NOV 27 TURKEY DAY
DEC 25 CHRISTMAS

Figure 15. Example of the System Calendar

END OF SESSION (MASTER TMS MENU OPTION ".")

Selecting the final option ".", End of Session, from the MASTER MENU will cause the program to display:

Thank you for using the Training Management System.

[illegible]

The terminal is now available for use by another user.

Appendix

Sample Print Output of the Course,
Instructor, and Facility Data Files

TAEG Report No. 97

TMS: COURSE FILE DATA RECORD

02/05/81 R 3 S 1 [1]

Date Last Reviewed/Revised] 02/05/81

CDP	CIN	RMS	Scheduling Priority	Short Title	Long Title
0143	A 026 0014	5NMB	0.000	MINE CM OF	

Class Size	Class Input	Course Length	Manpower Authorized	Instructors		Support		Trainers	
				Onboard	Required	Manpower Authorized	Onboard	Available	Required
10	50	15	3	1	1	4	2	4	1

Contact Ratios (type/hours)									
I	II	III	IV	V	VI	VII			
25 / 108	10 / 36	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0			

Number of Modules	Start Date		Shift 1		Shift 2		Shift 3		Concurrent Classes	Average-on-Board
	Week	D-0-W	Classes / Freq	Freq	Classes / Freq	Freq	Classes / Freq	Freq		
2	1 (OCT 6)	1 (Mon)	5 /	50	0 /	0	0 /	0	0.30	2.0

Number of Sessions per Module																															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
1	1																														

SAMPLE OF COURSE FILE PRINT FORMAT

TMS: COURSE FILE DATA RECORD

[illegible]

SAMPLE OF COURSE FILE PRINT FORMAT (continued)

TAEG Report No. 97

TMS: INSTRUCTOR FILE DATA RECORD 02/05/81 R 3 S 1 [1] Date Last Reviewed] 02/05/81 Date Last Changed] 02/05/81

Inst ID	Instructor Name	SS Number	Rank/Rate	Pri	Sec1	Sec2	Sec3	Sec4	Report Date	Rotating Date	Hours Avail	Hours Used	Utilization
b0001	ben				10005				12/ 5/80	12/12/88	4000	200	5.0 %

Shift	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
Shift 1	OCT 06	OCT 13	OCT 20	OCT 27	NOV 03	NOV 10	NOV 17	NOV 24	DEC 01	DEC 08	DEC 15	JAN 05	JAN 12	JAN 19	JAN 26	FEB 02	FEB 09	FEB 16	FEB 23	MAR 02	MAR 09	MAR 16	MAR 23	MAR 30	APR 06	APR 13	APR 20	APR 27	MAY 04	MAY 11	MAY 18	MAY 25	JUN 01	JUN 08
Shift 2	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF
Shift 3	.....	.....	XXXXX	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shift 1	FEB 16	FEB 23	MAR 02	MAR 09	MAR 16	MAR 23	MAR 30	APR 06	APR 13	APR 20	APR 27	MAY 04	MAY 11	MAY 18	MAY 25	JUN 01	JUN 08	JUN 15	JUN 22	JUN 29	JUL 06	JUL 13	JUL 20	JUL 27	AUG 03	AUG 10	AUG 17	AUG 24	AUG 31	SEP 07	SEP 14	SEP 21	SEP 28	OCT 05
Shift 2	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF
Shift 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shift 1	JUN 15	JUN 22	JUN 29	JUL 06	JUL 13	JUL 20	JUL 27	AUG 03	AUG 10	AUG 17	AUG 24	AUG 31	SEP 07	SEP 14	SEP 21	SEP 28	OCT 05	OCT 12	OCT 19	OCT 26	NOV 02	NOV 09	NOV 16	NOV 23	NOV 30	DEC 07	DEC 14	JAN 04	JAN 11	JAN 18	JAN 25	FEB 01	FEB 08	FEB 15
Shift 2	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF
Shift 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shift 1	OCT 12	OCT 19	OCT 26	NOV 02	NOV 09	NOV 16	NOV 23	NOV 30	DEC 07	DEC 14	JAN 04	JAN 11	JAN 18	JAN 25	FEB 01	FEB 08	FEB 15	FEB 22	MAR 01	MAR 08	MAR 15	MAR 22	MAR 29	APR 05	APR 12	APR 19	APR 26	MAY 03	MAY 10	MAY 17	MAY 24	MAY 31	JUN 07	JUN 14
Shift 2	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF
Shift 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shift 1	FEB 22	MAR 01	MAR 08	MAR 15	MAR 22	MAR 29	APR 05	APR 12	APR 19	APR 26	MAY 03	MAY 10	MAY 17	MAY 24	MAY 31	JUN 07	JUN 14	FEB 22	MAR 01	MAR 08	MAR 15	MAR 22	MAR 29	APR 05	APR 12	APR 19	APR 26	MAY 03	MAY 10	MAY 17	MAY 24	MAY 31	JUN 07	JUN 14
Shift 2	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF
Shift 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

SAMPLE OF INSTRUCTOR FILE PRINT FORMAT

Inst ID	Instructor Name	SS Number	Rank/ Rate	Sec1 Qual	Sec2 Qual	Sec3 Qual	Sec4 Qual	Report Date	Rotating Date	Hours Avail	Hours Used	Utiliza- tion
c0001	chuck	123456789	pgmr	0001	0002			1 / 1/81	1 / 1/82	4000	0	0.0 %

[illegible][illegible][illegible][illegible][illegible]

SAMPLE OF INSTRUCTOR FILE PRINT FORMAT (continued)

FMS: FACILITY FILE DATA RECORD										02/05/81 R 3 S 1 [1]		Date Last Reviewed 02/05/81		Date Last Changed 02/05/81	
Type: Bldg Room	Room Number	Special Qualification	Room Size	Hours Avail	Hours Used	Utilization	Building Name								
01	1	2	50	4000	400	10.0 %	plato terminal room with 10 terminals								

[illegible]

TMS: FACILITY FILE DATA RECORD 02/05/81 R 3 S 1 [2] Date Last Reviewed] 02/05/81 Date Last changed] 02/05/81

Type: Bldg: Room : Special : Room : Hours: Hours: Utiliza- : Building Name :
 Room: Number: Qualification : Size : Avail: Used : tion :
 03 : 3 : 1 : : : 50 : 4000 : 200 : 5.0 % : conference room - 2 blackboards, 12 chairs, and 2 tables

Shift 1 2 3	OCT 06	OCT 13	OCT 20	OCT 27	NOV 03	NOV 10	NOV 17	NOV 24	DEC 01	DEC 08	DEC 15	JAN 05	JAN 12	JAN 19	JAN 26	FEB 02	FEB 09
	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF

Shift 1 2 3	FEB 16	FEB 23	MAR 02	MAR 09	MAR 16	MAR 23	MAR 30	APR 06	APR 13	APR 20	APR 27	MAY 04	MAY 11	MAY 18	MAY 25	JUN 01	JUN 08
	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF

Shift 1 2 3	JUN 15	JUN 22	JUN 29	JUL 06	JUL 13	JUL 20	JUL 27	AUG 03	AUG 10	AUG 17	AUG 24	AUG 31	SEP 07	SEP 14	SEP 21	SEP 28	OCT 05
	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF

Shift 1 2 3	OCT 12	OCT 19	OCT 26	NOV 02	NOV 09	NOV 16	NOV 23	NOV 30	DEC 07	DEC 14	JAN 04	JAN 11	JAN 18	JAN 25	FEB 01	FEB 08	FEB 15
	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF

Shift 1 2 3	FEB 22	MAR 01	MAR 08	MAR 15	MAR 22	MAR 29	APR 05	APR 12	APR 19	APR 26	MAY 03	MAY 10	MAY 17	MAY 24	MAY 31	JUN 07	JUN 14
	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF	MTWTF

SAMPLE OF FACILITY FILE PRINT FORMAT (continued)

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